

THE ARCHITECTS' JOURNAL



★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

Standard contents

every issue does not necessarily contain all these contents, but they are the regular features which continually recur

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Stragal's Notes and Topics

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Criticism

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CURRENT BUILDING

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Details of Planning, Construction,

Finishes and Costs

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Wanted and Vacant

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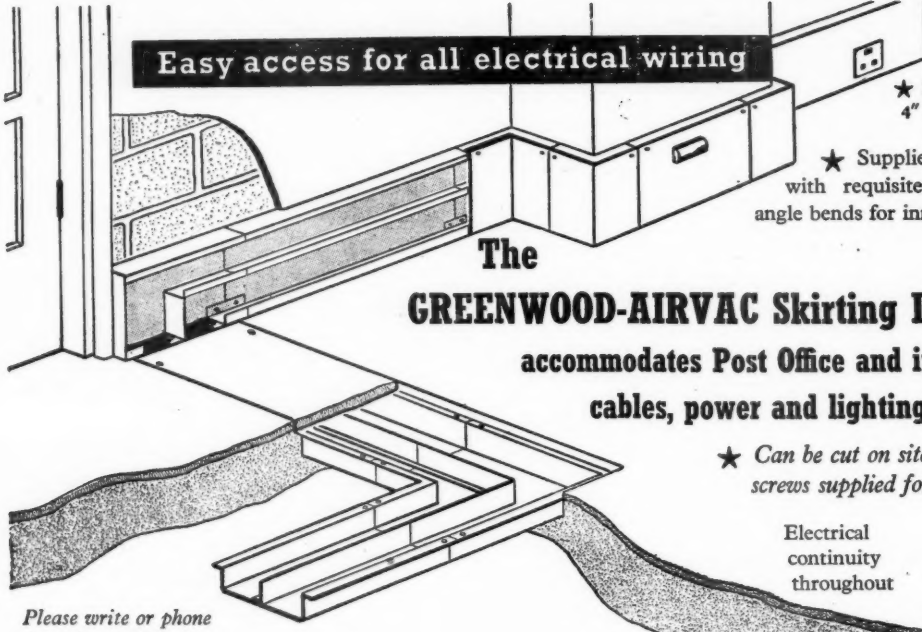
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AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards' Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
CIAM	Congrès Internationaux d'Architecture Moderne. Dolderal, 7, Zurich, Switzerland	Trafalgar 8000
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Sloane 4280
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 9116
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Reading 72255
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reliance 7611
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Whitehall 0540
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Trafalgar 8855
DOT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Sackville House, 40, Piccadilly, W.1. Regent 4448
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	Welbeck 9966
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 1781
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Gaelic Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266



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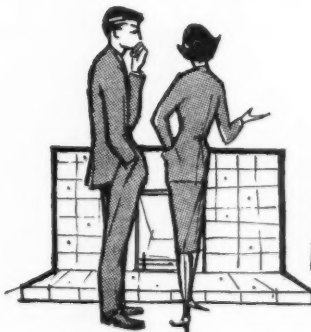
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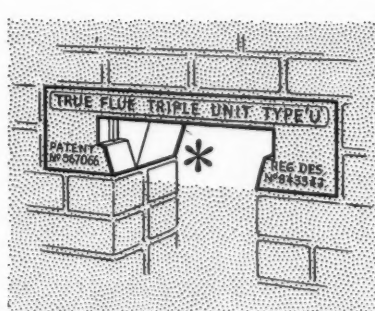
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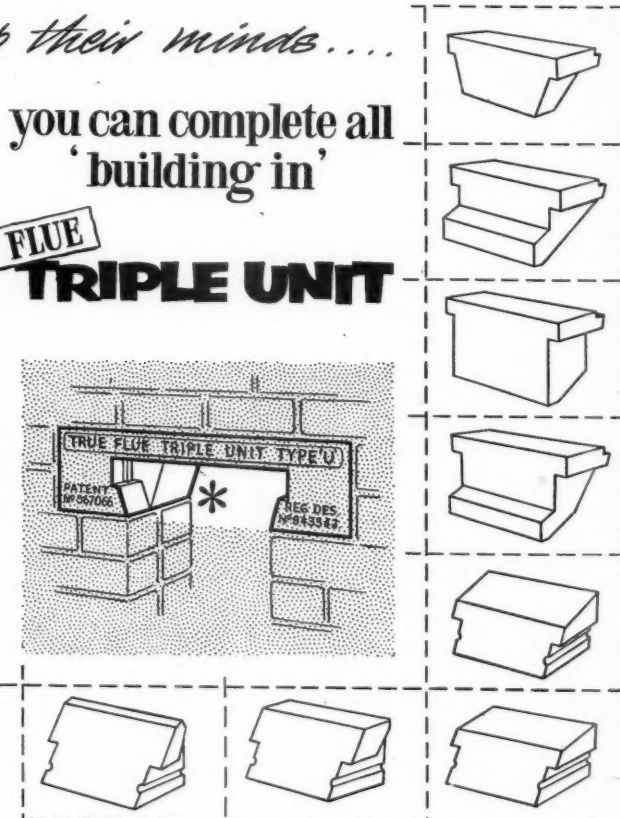
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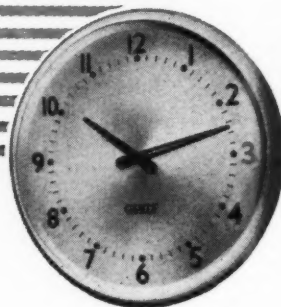
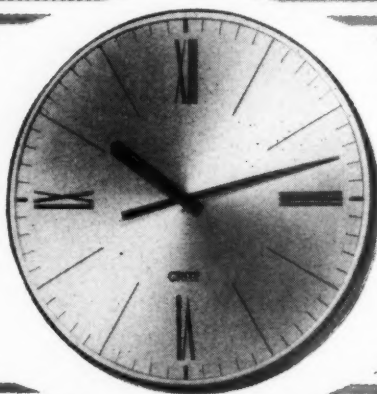
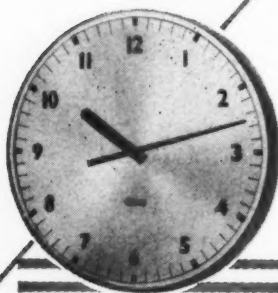
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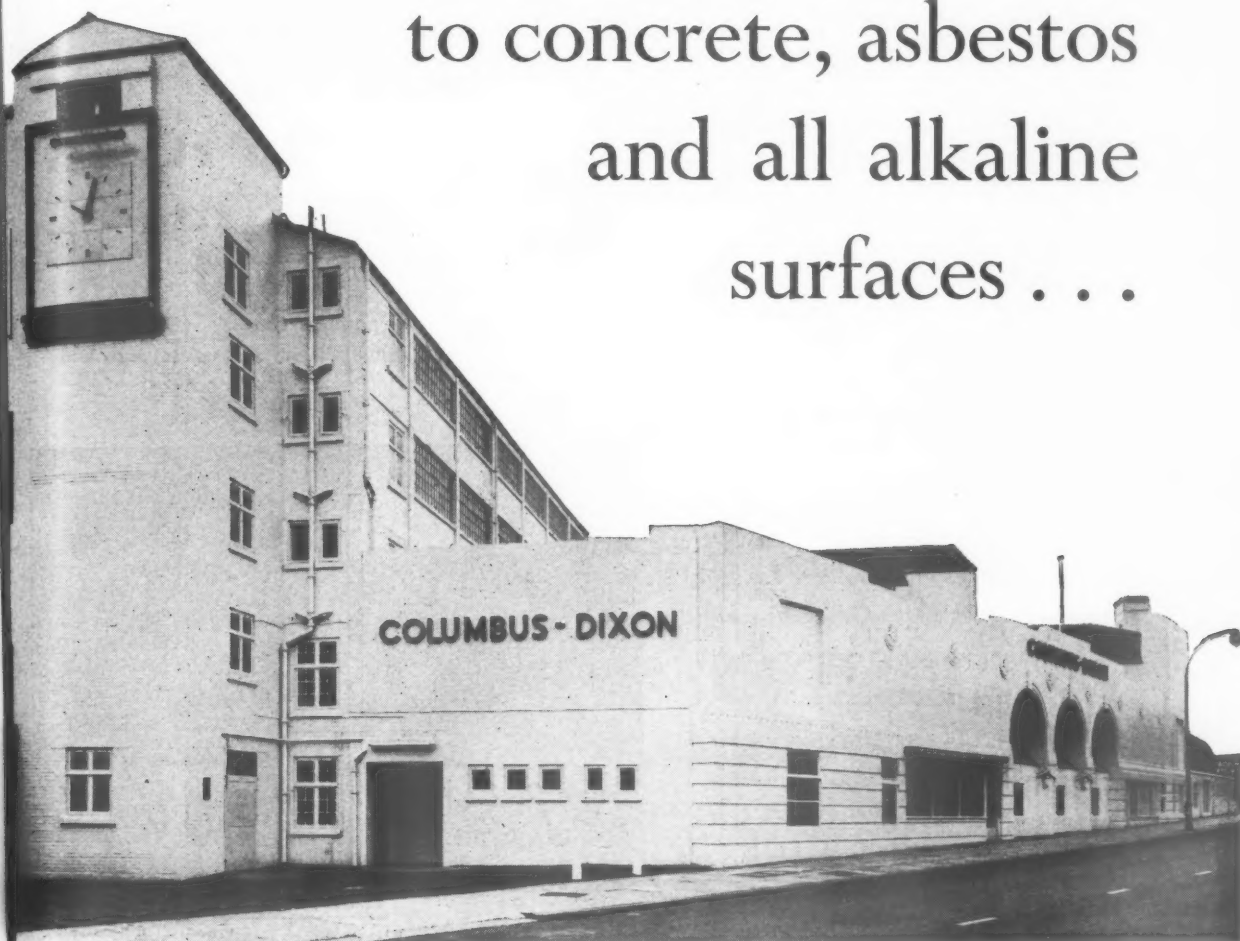
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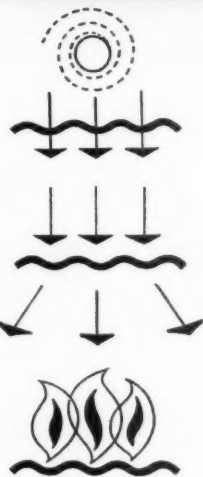
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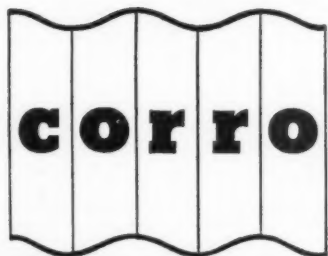
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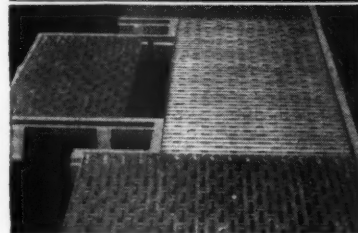
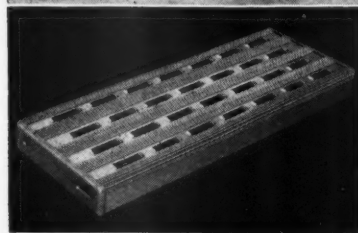
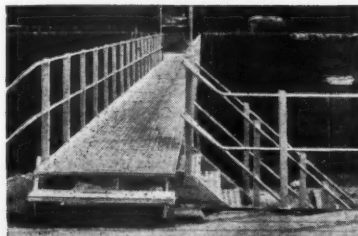
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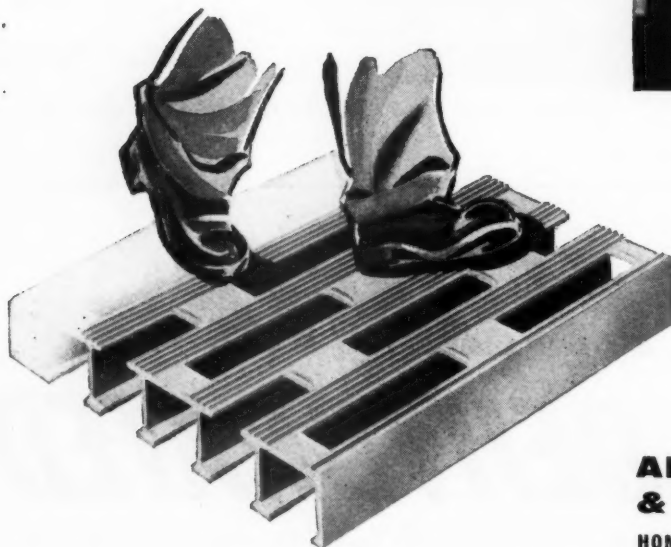
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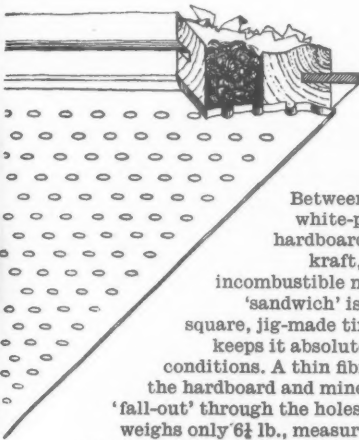
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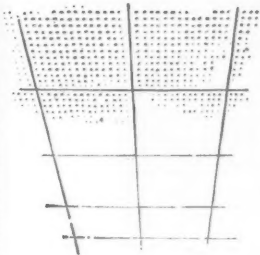
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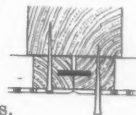
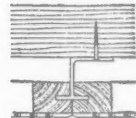


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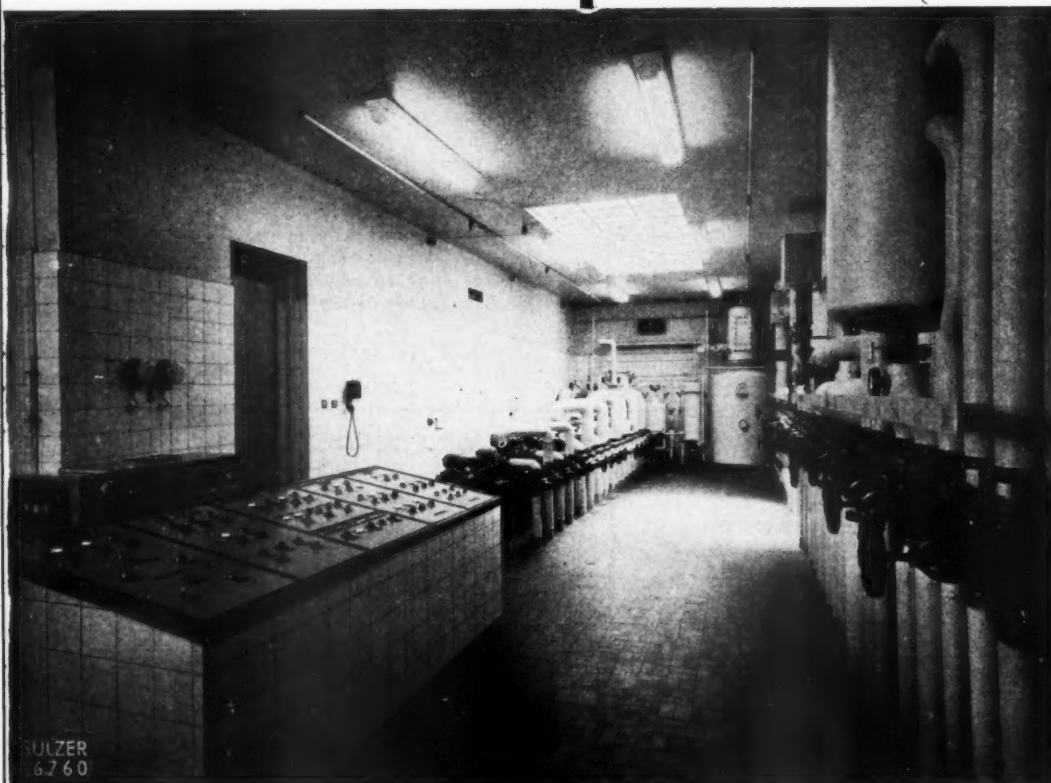
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Dover House, Whitehall, the home of the Scottish Office in London, was built in 1755 by James Paine. The beautiful interior of this building was designed by Henry Holland and is one of his best known works. When this building was taken over by the Ministry it was important to keep the rooms well heated, and yet allow them to retain their natural air of elegance. Crane radiators were chosen because, apart from doing a first-class job, they are in complete harmony with their surroundings. The Crane Pall Mall type radiators which have been installed maintain a comfortable temperature—yet another example of how Crane equipment performs a good service without spoiling the character of a fine old building.

Once again, radiators by Crane



ABOVE: Part of the Secretary of State for Scotland's room featuring Crane Pall Mall radiators.

LEFT: A view of the Entrance Hall which has four Ionic columns rising to an elegant dome, the crown of which is glazed with an extremely delicate grille.

HEATING ENGINEERS:
H. R. Noble Ltd., under the direction of the Chief Engineer's Division of the Ministry of Works.

CRANE HEATING EQUIPMENT

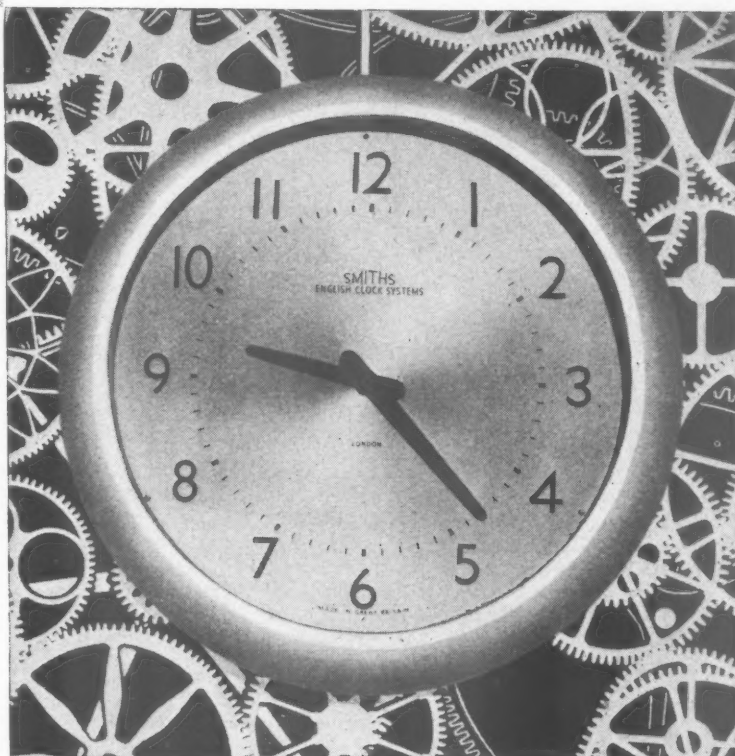
CRANE LTD., 15-16 RED LION COURT, FLEET STREET, LONDON, E.C.4. Works: IPSWICH.
Branches: Birmingham, Brentford, Bristol, Glasgow, London, Manchester.

SMITHS

new service for the ARCHITECT & DESIGNER

Smiths Clocks and Watches Ltd. and English Clock Systems have combined to give a complete service to both Architect and Designer. All Wall Clocks in the new extensive Smiths and E.C.S. ranges together with 'specials' can now be ordered through the Architects' Service Department of English Clock Systems. Clocks can be either 'Sectric' or fitted with impulse movements for operation from E.C.S. Pendulum Master Clock.

Also available: the larger interior/exterior clocks, advertising clocks, time recorders, bell signal clocks, watchman's clocks, time switches and process timers etc. In fact, the new Architects' Service Department can supply the complete range of timekeeping equipment required for factory, school or office.



'SPECIALS' SERVICE

In case there is not a suitable clock for the particular requirements from the wide range available we can now produce to Architects' own specification from 6" Wall Clocks to the largest Tower Clock.

Farnham FLUSH FITTING WALL CLOCK from the E.C.S. range. A circular grained aluminium dial with light Gill Sans numerals. Case of spun aluminium. Standard finish white or cream (any colour supplied at small extra cost). Stud and keyhole fixing. Supplied with standard 6" wall box.

Dimensions: Dia. of face 9", 12". Overall dia: 10 $\frac{7}{16}$ ", 13 $\frac{3}{8}$ ". Projection from wall 1 $\frac{1}{2}$ "
Surface mounted model **MAYFAIR**—hinged-type case—bronze finish.

INFORMATION AND LEAFLETS FROM THE ARCHITECTS' SERVICE DEPT.

BRANCH OFFICE & SHOWROOMS
IN MANCHESTER, BIRMINGHAM
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ENGLISH CLOCK SYSTEMS*

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Telephone: LAngham 7226

* A BRANCH OF THE CLOCK AND WATCH DIVISION OF

SMITHS

S. SMITH & SONS (ENGLAND) LTD.
G1180

Check these against your next specification

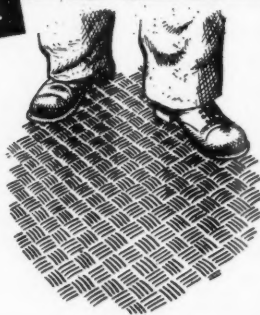
'TERRABOND'

Serrated brass or aluminium alloy strip for terrazzo flooring. Reduces laying costs by allowing an early start to filling-in. Two sizes— $\frac{3}{8}$ " x $\frac{1}{2}$ " and $\frac{1}{4}$ " x $\frac{1}{2}$ ", special sizes to order.



'KYNAL' TREADPLATE

Aluminium alloy treadplate half the weight of equally rigid steel plate. 1 - 4 ft. widths, lengths up to 12 ft., gauges from $\frac{1}{8}$ " - $\frac{1}{4}$ ". Diamond pattern chequer plate also available.



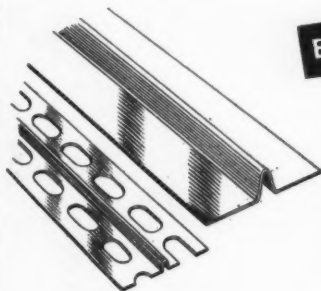
'KUDAMPRO' dampcourse strip

Copper strip for horizontal damp-proof courses. Will not tear, puncture or exude from the joints. Soft-temper coils of standard length, widths up to 36".



Expansion joint strip

Copper strip for expansion joints, two patterns — BS 1878 and to I.C.I. design with punched holes to keep strip firm. Standard 10 - 12 ft. lengths x 5" wide.



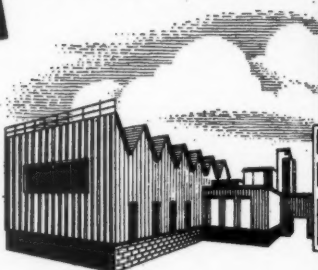
Roofing strip

Copper or aluminium alloys for roofing strip, weatherings, gutterings & flashings.



'KYNAL' profiled sheets

Aluminium alloy profiled sheet for light-weight, durable roof and wall cladding. Three types—corrugated (curved sheets available), troughed and 'Kynalok' Secret-fix (with provision for insulation lining).



Extrusions

Copper alloy for balustrades, doors, window frames, stair nosings, shop fittings, and decorative trim. 'Kynal' aluminium alloy for structural members, trusses, purlins, glazing bars, handrails, etc.

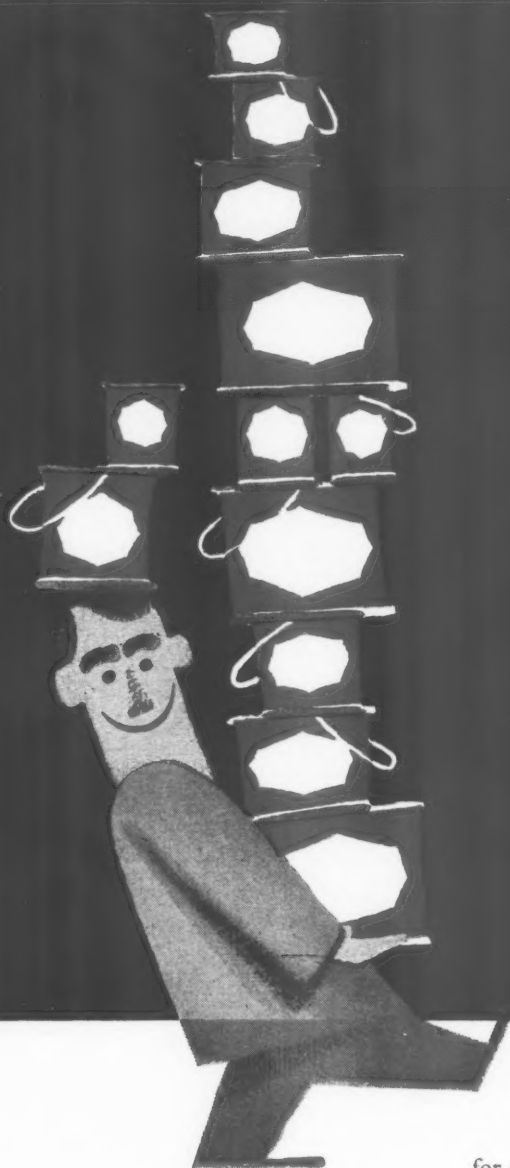


Modern materials in modern buildings

IMPERIAL CHEMICAL INDUSTRIES LIMITED, LONDON, S.W.1



M.25



Something's

changing the
face of Britain

giving a lift
to the looks and the life
of new projects
and conversions
all over the country

First plastic emulsion paint suitable

for outside use, Pammastic vastly increases the
potentialities of exterior colour in architecture. For pointing good features and disguising
the bad, for achieving new effect of proportion and uniquely interesting colour schemes,

Pammastic's range of 25 intermixable colours is an unexcelled design medium.

NO COMPLICATIONS

Pammastic is probably the simplest kind of wall paint ever devised. No undercoat or primer; will not peel or flake; for use on brick, plaster, stucco, cement, concrete, pebbledash, asbestos and cement paint—provided the surface is sound. Perfect, in fact, for *outside* as well as inside uses.

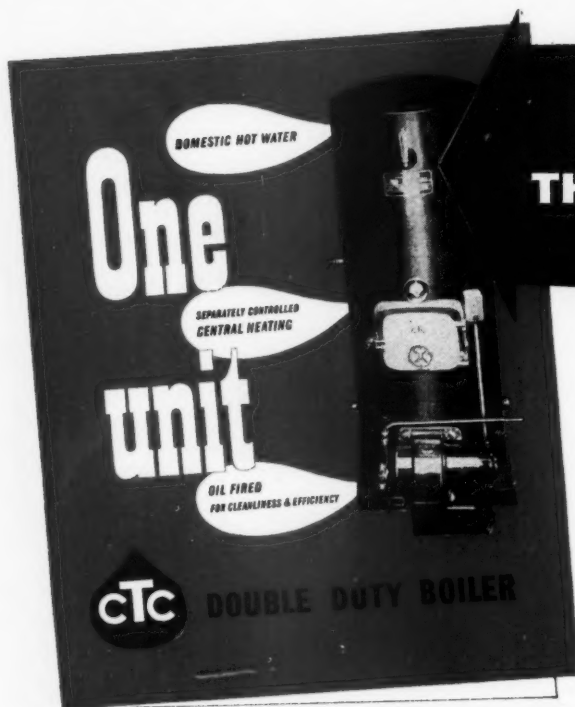
TROPICALLY TESTED

Pammastic has proved it remains unaffected by humidity, rain or industrial fumes. It is distinguished for its low dirt retention, great adhesion and fastness to light. Its effective life is far longer than that of conventional outside wall paints. Over the years, it is certainly the most economical kind of exterior wall paint.

PAMMASTIC

the world's best Emulsion Paint

Further information from: Blundell, Spence & Co. Ltd., 37 Queen Square, London, W.C.1



MAKE SURE YOU KNOW ALL ABOUT THIS C.T.C. DOUBLE-DUTY OIL FIRED BOILER

TWO IN ONE UNIT!

DOMESTIC HOT WATER SUPPLY 150 F.
CENTRAL HEATING 95°F.
and C.T.C. CUT COSTS!

THIS IS HOW:—An indirect cylinder is fitted inside the Boiler-shell thus supplying domestic hot water and dispensing with the extra piping between boiler and cylinder—heat losses are eliminated. Each circuit is independently controlled so that maximum heat for domestic water is obtained with the advantage of controlled heat for the radiators.

Over 10,000 C.T.C. OIL FIRED Boilers are in use in private homes and Industry. With C.T.C. you have the most advanced system of heating, backed by the service of heating specialists with over 25 years experience.

Architects, Heating Engineers and Builders everywhere are recommending and specifying C.T.C.—it is the sure way to ECONOMY and EFFICIENCY.



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Telephone: BELgravia 3478/6286

Write **NOW** for leaflet, or 'phone for particulars

What is nesting time?

It's anytime—yet no time at all—with **KINGFISHER** Hardwood chairs. They are built to give comfort and take every punishment.

The unique metal-braced construction gives a rock-like rigidity and makes maintenance easy.

Proved in "performance tests" by 750,000 users in schools, works canteens and halls.

There are several variations of design in this chair—May we send you full details of our comprehensive range of furniture.

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Telephone: Tipton 1631

Telegrams: Kingfisher, Phone, West Bromwich.

London Office: 139 Knightsbridge, S.W.1.

Telephone: Kensington 1331



WN2



WN3

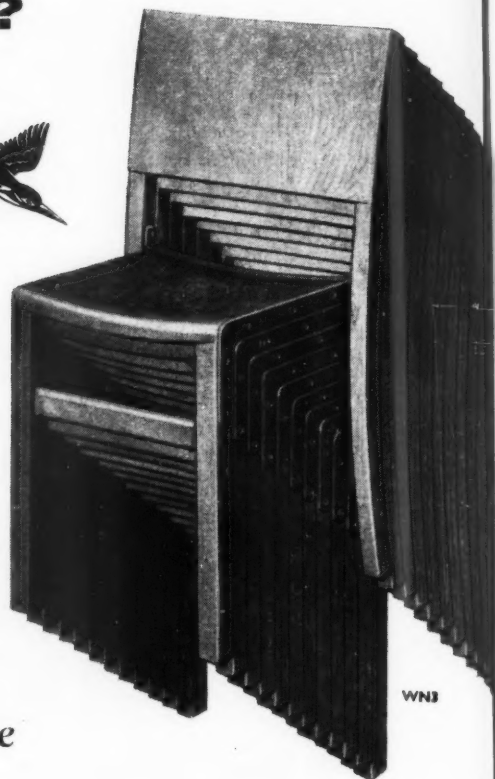


WN4



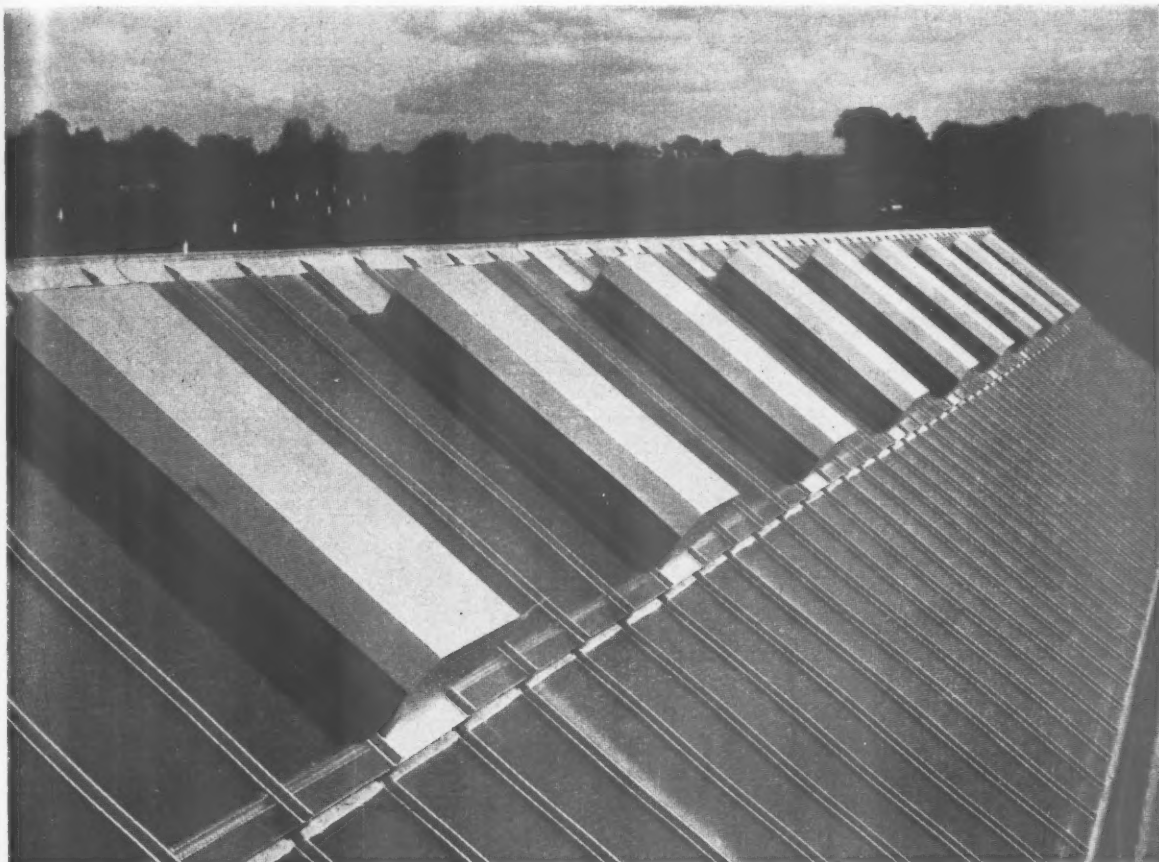
WN5

Kingfisher Nesting Furniture



GREENWOOD - AIRVAC ROOFLINE EXTRACTORS

for natural ventilation of industrial buildings



Photograph by courtesy of
A. Wander Ltd, Ovaltine Works, Kings Langley, Herts.

Architect: G. P. Nodes, A.R.I.B.A.
Contractors: John Mowlem & Co. Ltd

Ideal for providing either permanent or controlled ventilation by natural means in all types of industrial buildings, this patent Roofline Extractor has been designed to provide a highly efficient and thoroughly reliable roof-mounted extractor, and is included in architects' specifications

because . . . low overall height ensures an unbroken roofline
closed top design provides complete weathering
unique splitter type control ensures heat conservation
strong construction withstands all climatic conditions
heavy gauge hardened aluminium ensures high corrosive
resistance and durability

and, finally, because of Greenwood-Airvac's reputation for sound design
and good quality.

Please ask for leaflet RE 3 for further details of the Roofline.

Greenwood-Airvac *ventilation*

GREENWOOD'S AND AIRVAC VENTILATING COMPANY LTD

PATENTEES, DESIGNERS AND MANUFACTURERS OF
VENTILATING EQUIPMENT AND ELECTRICAL
CONDUIT SYSTEMS.

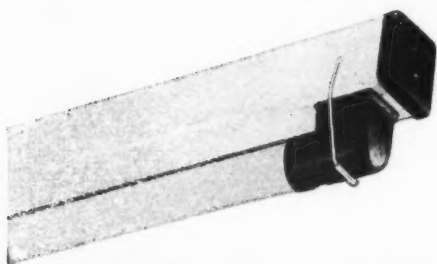


BEACON HOUSE, KINGSWAY, LONDON, W.C.2.
CHANCERY 8135 (4 LINES). 'AIRVAC', LONDON.



an end to this

lighting fittings . . . what a worry and expense they can be!
Corrosion is the disease: and the only cure is replacement—
expensive both in labour and money. But Simplex have
found a prevention better than any cure . . .



with Simplex A.C.F. fittings!

Here at last is a new fluorescent lighting fitting guaranteed to
withstand dust, damp, corrosive atmosphere—even acid vapours.

The A.C.F. by Simplex cannot corrode. It is sheathed in
plastic, sealed against every attacking agent. Yet it costs no more
to install than previous unsatisfactory fittings, and with no
maintenance costs, actually saves money as it works!

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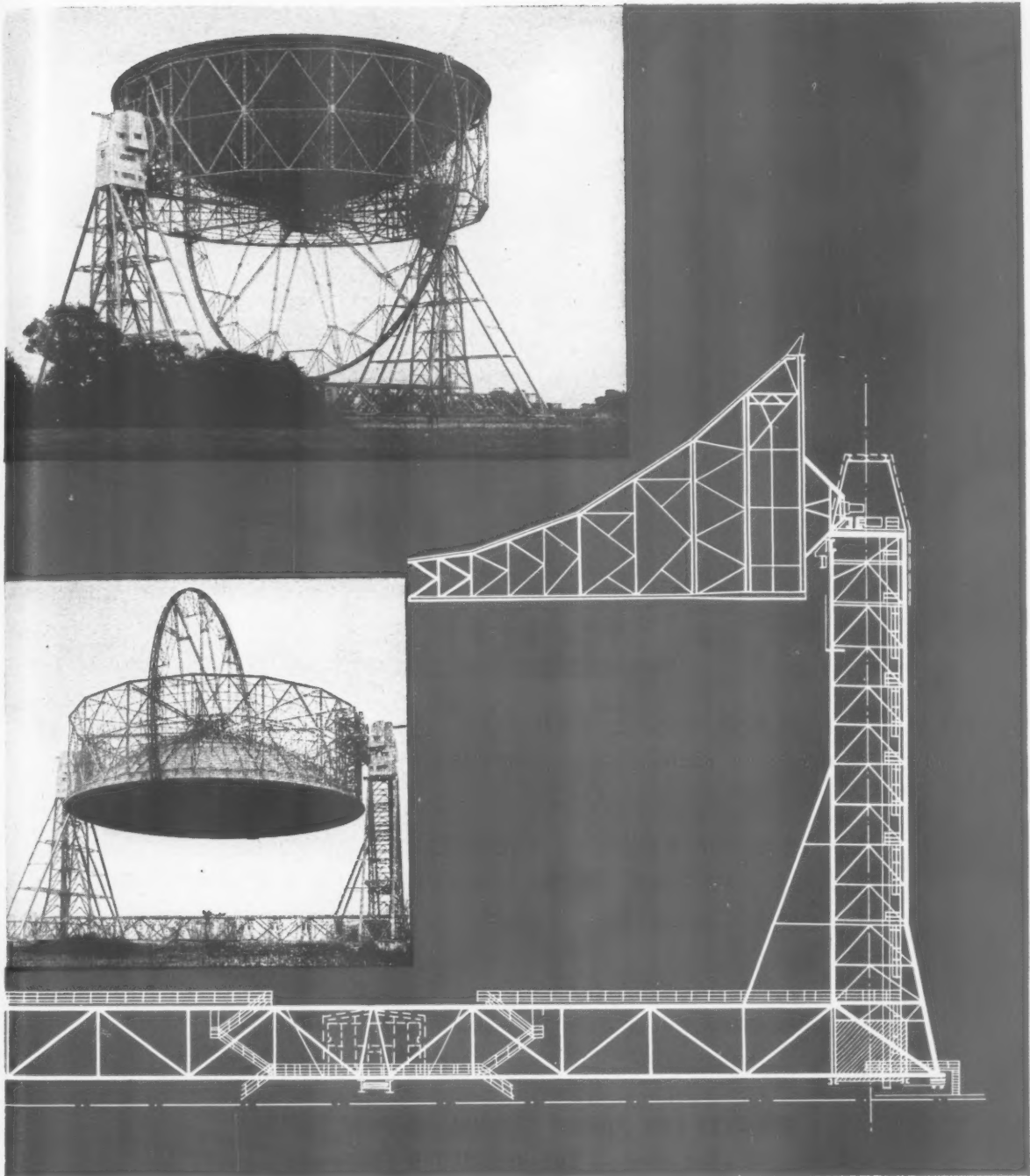
from £9.6.4.
GUARANTEED FOR 2 YEARS

Simplex

Simplex Electric Co Ltd
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A 77 COMPANY





Radio telescope at Jodrell Bank built by United Steel Structural Company

Bowl diameter—250 ft.

Height of towers—180 ft.

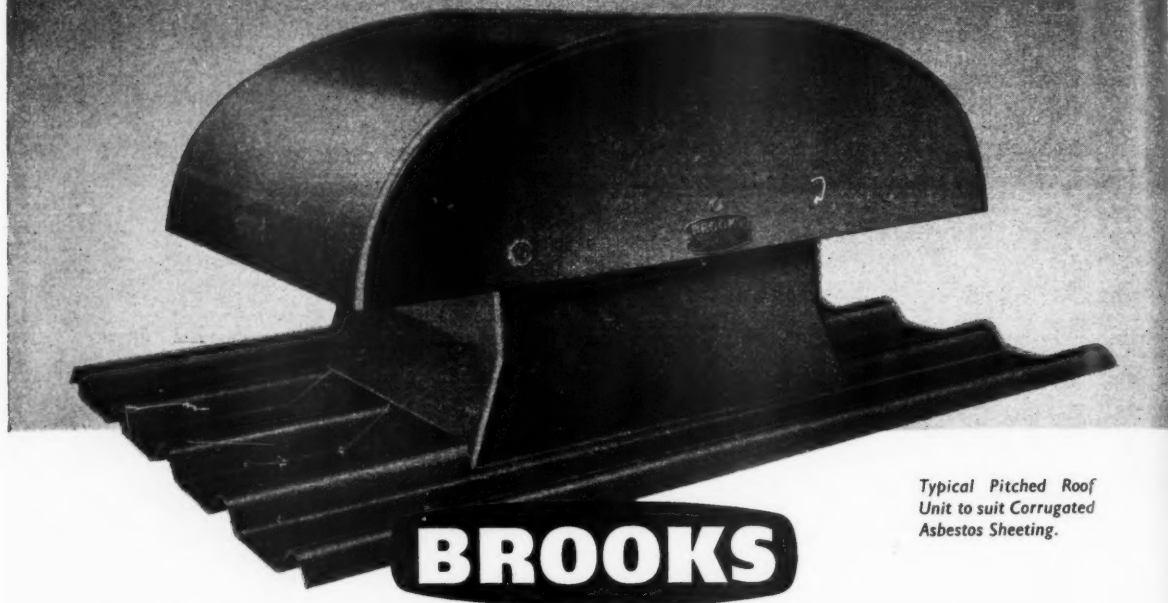
Weight of structural steelwork—1,800 tons

Consulting engineers: Husband & Company



UNITED STEEL STRUCTURAL COMPANY LIMITED
SCUNTHORPE · LINCOLNSHIRE

Lightweight ventilation



Typical Pitched Roof Unit to suit Corrugated Asbestos Sheetting.

BROOKS

MOULDED GLASS-FIBRE FAN-POWERED VENTILATION UNITS

POLYESTER RESIN BONDED • FIRE RESISTANT • NON - CORROSIVE

- for*
- TURNERS COMBINED SHEETING • TURNERS BIG-SIX • CORROPLAST
 - DECKINGS — ASBESTOS — METAL — WOODWOOL SLAB • GLAZING MOUNTING
 - FLAT ROOFS — CONCRETE — TIMBER • PITCHED SLATED AND BOARDED

also

- CHEMICAL FUME UNITS WITH POLYTHENE COATED FANS

and

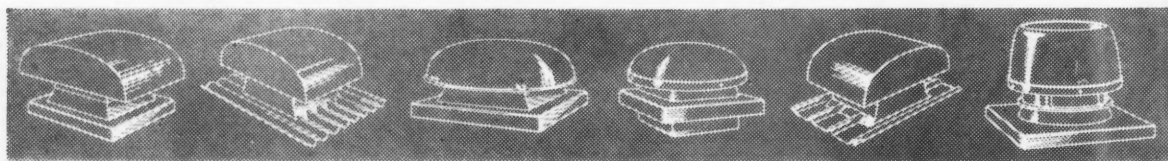
- SMALL CAPACITY LOW PRICED GENERAL PURPOSE UNITS
THE NELSON (400 cfm) — THE TRAFALGAR (750) cfm)

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BROOKS VENTILATION UNITS LIMITED

TRAFALGAR HOUSE • GREAT NEWPORT STREET • LONDON • W.C.2. • Telephone: COVent Garden 1355-1356

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R.12.

CANADIAN TIMBER

...from Canada's vast forests
a wood for almost every need!



CANADIAN SPRUCE

Special Properties

Excellent strength-weight ratio
Medium soft textured
Odourless and tasteless
Very good nailing and
gluing properties
Highly resilient

Typical Uses

Scaffold planks
General construction
Case making and food packaging
Ladders, oars, paddles and
boat manufacturing
Musical instruments and
sounding boards

For further information on Canadian Woods, contact:
Commercial Counsellor (Timber), Canada House, London, S.W.1.

Penta-treated timber lasts



The most powerful wood preservative in commercial use is Penta — Monsanto's pentachlorophenol. Penta gives sure protection against dry rot, termites, furniture beetles, and long-horned and powder-post beetles. Other significant advantages of Penta include:

1. In Penta-treated timber, dimensional changes are negligible.
2. Less leaching—safer in ground contact.
3. Penta-treated timber is clean to handle, non-staining.
4. Penta-treated timber does not require re-seasoning.
5. Penta is chemically stable, has negligible volatility, and is virtually insoluble in water.

Architects and corporations can now specify timber Penta-treated by pressure or non-pressure methods; Penta-treated timber is now available from timber merchants throughout Britain.

Builders and householders can obtain Penta-based preservatives from the majority of wood preservative manufacturers. Monsanto will be glad to provide you with a list of suppliers in your area.

Penta is one chemical from the wide range Monsanto offers industry: a range to which Monsanto is constantly adding new better products — as well as improving those you already use.

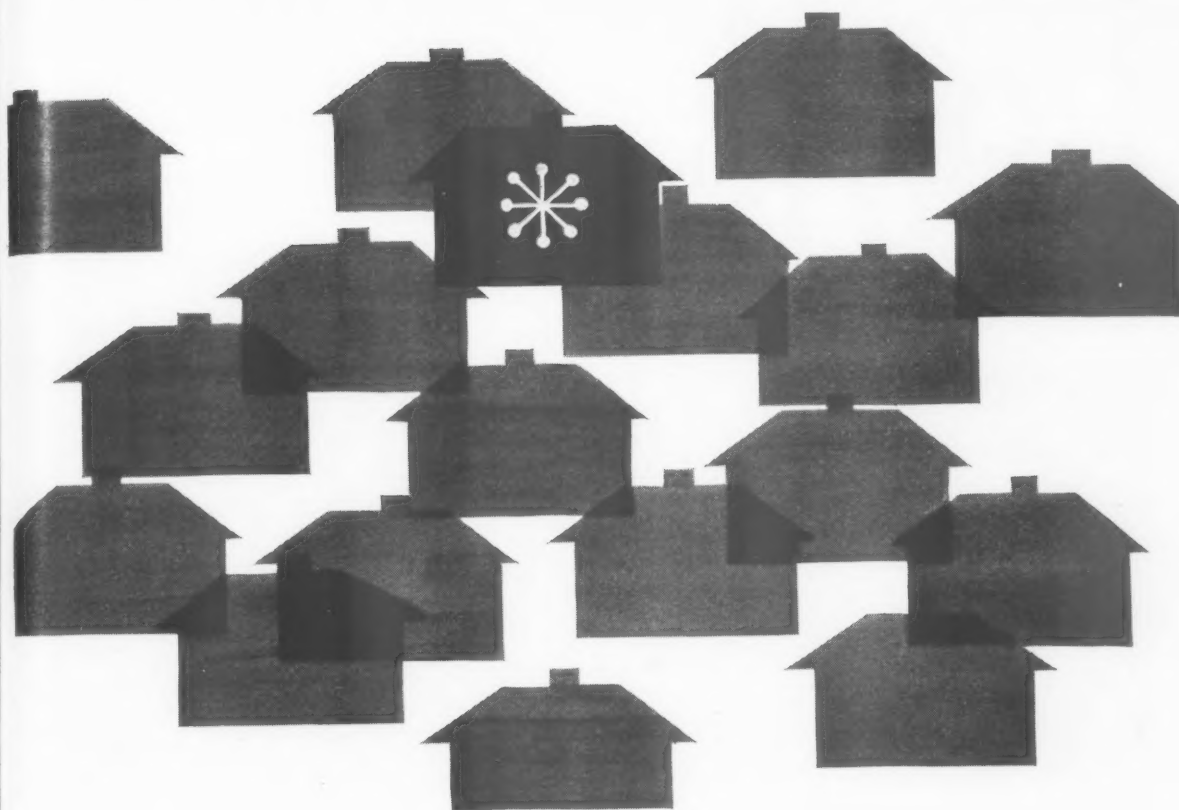


MONSANTO CHEMICALS LIMITED

348 Monsanto House, Victoria Street, London, S.W.1 and at Royal Exchange, Manchester, 2

Regd.
In association with: Monsanto Chemical Company, St. Louis, U.S.A. Monsanto Canada Limited, Montreal. Monsanto Chemicals (Australia) Ltd., Melbourne. Monsanto Chemicals of India Private Ltd., Bombay. Representatives in the world's principal cities.

Monsanto chemicals
help industry —
to bring a better
future closer



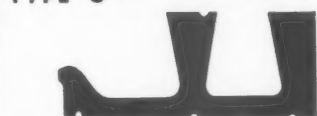
This house cost nothing to build



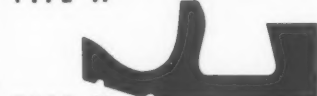
ROYSTON



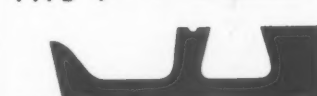
TYPE G



TYPE H



TYPE T



TYPE P



TYPE N

It is possible to build an extra house in every
sixty or so—by using Finlock Gutters. Reason :

- ★ It is cheaper to convey rainwater at eaves
level than underground.
- ★ By fixing the whole of the eaves with one simple unit,
five expensive items are redundant.

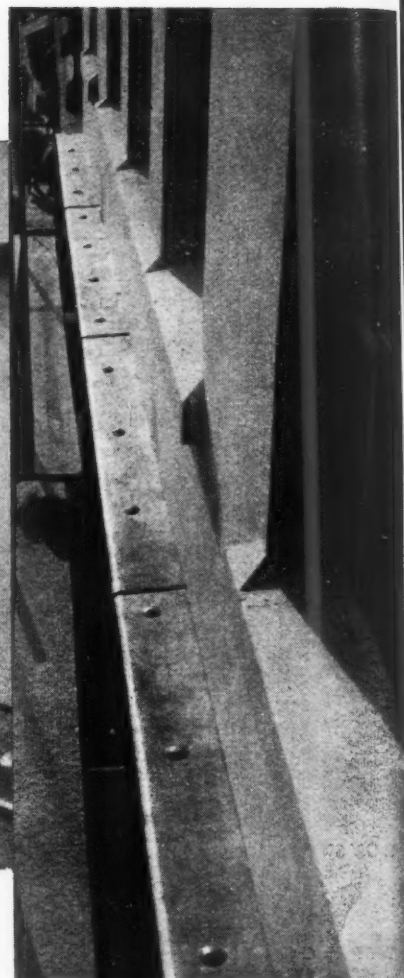
Why not send us your Site Layout so that we can make
specific recommendations.

FINLOCK GUTTERS

WITH THE 20 YEAR GUARANTEED LINING

FINLOCK GUTTERS LIMITED, Finlock House, Frant Road, Tunbridge Wells, Kent,
Phone : Tunbridge Wells 3396 (4 lines)

Lead weatherings...



*A typical example of lead weatherings for stone-faced buildings.
New office building, London W.1 Architect: H. G. Sumner, L.R.I.B.A.*

A FAMILIAR JOB to the plumber is fixing lead weatherings to cover cornices and similar projections of stone-faced buildings.

Lead is extensively used for such weatherings, because experience proves it to be the best material for the purpose—it gives

permanent protection

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The Association's Technical Information Bureau will gladly help with problems on the use of Lead Sheet and Pipe in building work. Details of the main uses are given in a series of information sheets and bulletins, which can be obtained by applying to the Association.

LEAD DEVELOPMENT ASSOCIATION • 18, ADAM STREET, LONDON, W.C.2

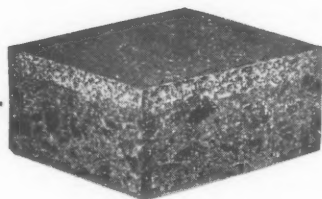
Telegrams: Leadevop, Rand, London Telephone: Whitehall 4171

B. 153

Steel clad ... see!



"You may think that my wearing armour is cheap publicity," our Sales Director was saying, "and you'd be quite right. What cheaper way of ramming home the ... er ... bull point* of Stelcon Floors than to hire this steel suit from M....s. Br....s. for a fiver a day, free joint oil included!"



*Stelcon Floors are made in steel plate form or with a top surface of steel chippings in concrete—which means they are exceptionally tough, hard-wearing and free from maintenance bills. They are literally steel clad ... see!

Stelcon FLOORS GIVE INDUSTRY A FIRM FOUNDATION

ANCHOR STEEL PLATES, STEEL CLAD FLAGS AND RAFTS

W.C. 2
Hall 417
B. 153

STELCON (INDUSTRIAL FLOORS) LTD., Dept. A, CLIFFORDS INN, LONDON, E.C.4. TEL: CHAncery 9541

Specialists in high class Standard Joinery



THE MIDLAND WOODWORKING CO LTD MELTON MOWBRAY

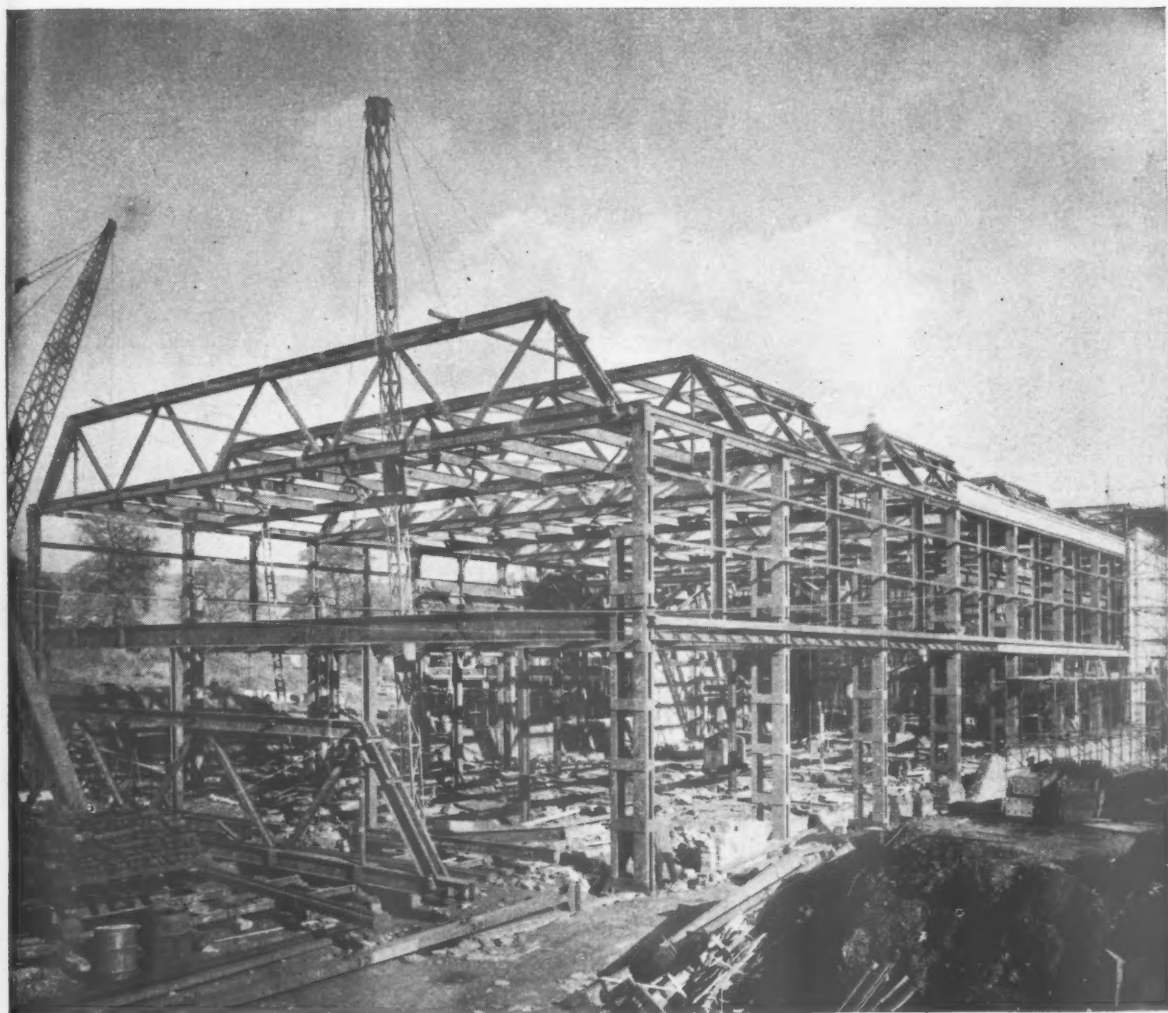
AP/MW 17

Welding by

BOOTH

The photograph shows welded steelwork in course of erection for Messrs. Ferodo Ltd's.

New Technical Division, Chapel-en-le-Frith, Derbyshire. This is the first phase of a three-stage building project for which BOOTH'S are fabricating and erecting all the steelwork. Architects: Messrs. Ashworth & Fletcher, A/L.R.I.B.A.

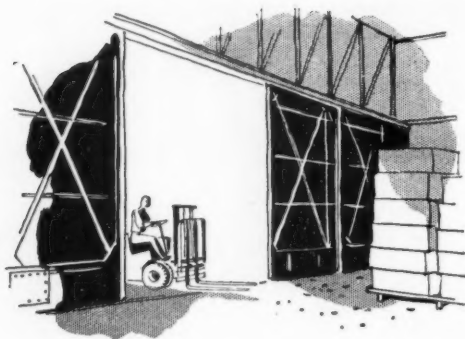


JOHN BOOTH & SONS (BOLTON) LTD.
HULTON STEELWORKS, BOLTON

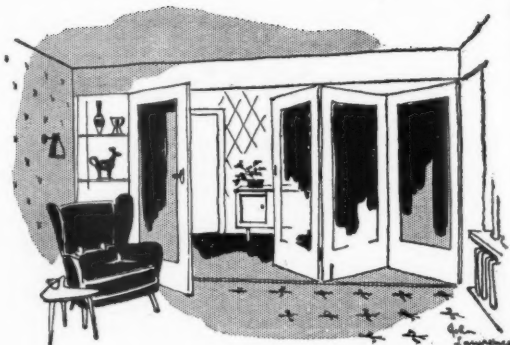
Telephone: BOLTON 1195

London Office: 26 Victoria Street, Westminster S.W.1

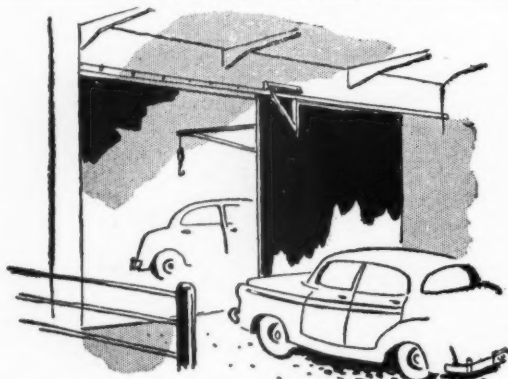
Telephone: ABBEY 7162



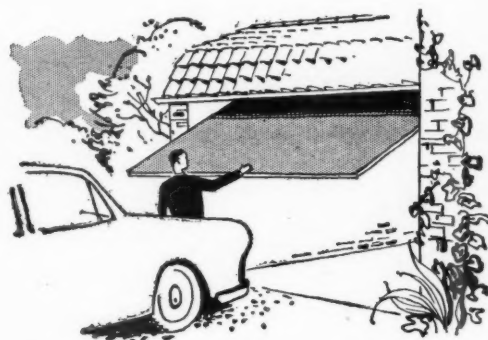
STRAIGHT SLIDING INDUSTRIAL



FOLDING DOMESTIC



POWERED AND SPECIAL APPLICATIONS



THE UPOVER

Door Craft by KING craftsmen

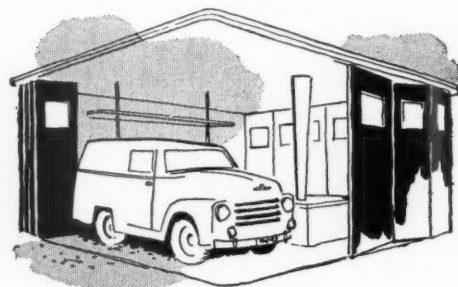
For sheer versatility and dependability, the KING range of doors and door gear is unbeatable. Close supervision at every stage of manufacture ensures the highest possible quality.

KING Door Craft is the result of 40 years experience in the design and construction of doors of every type, from simple domestic to remote controlled power-operated giants.

We can't hope to tell you all about our huge range here, so why not tell us your problem. The KING Technical Advisory Department is always ready to help on the correct application. This specialized knowledge is *free*. You will incur no obligation by enquiring. Early discussion often avoids delay and extra expense. Our representative will be pleased to call on you any time, *anywhere* in the world.

Write for literature to:

GEO. W. KING LTD., 201 ARGYLE WORKS, STEVENAGE, HERTS.
TEL: STEVENAGE 440

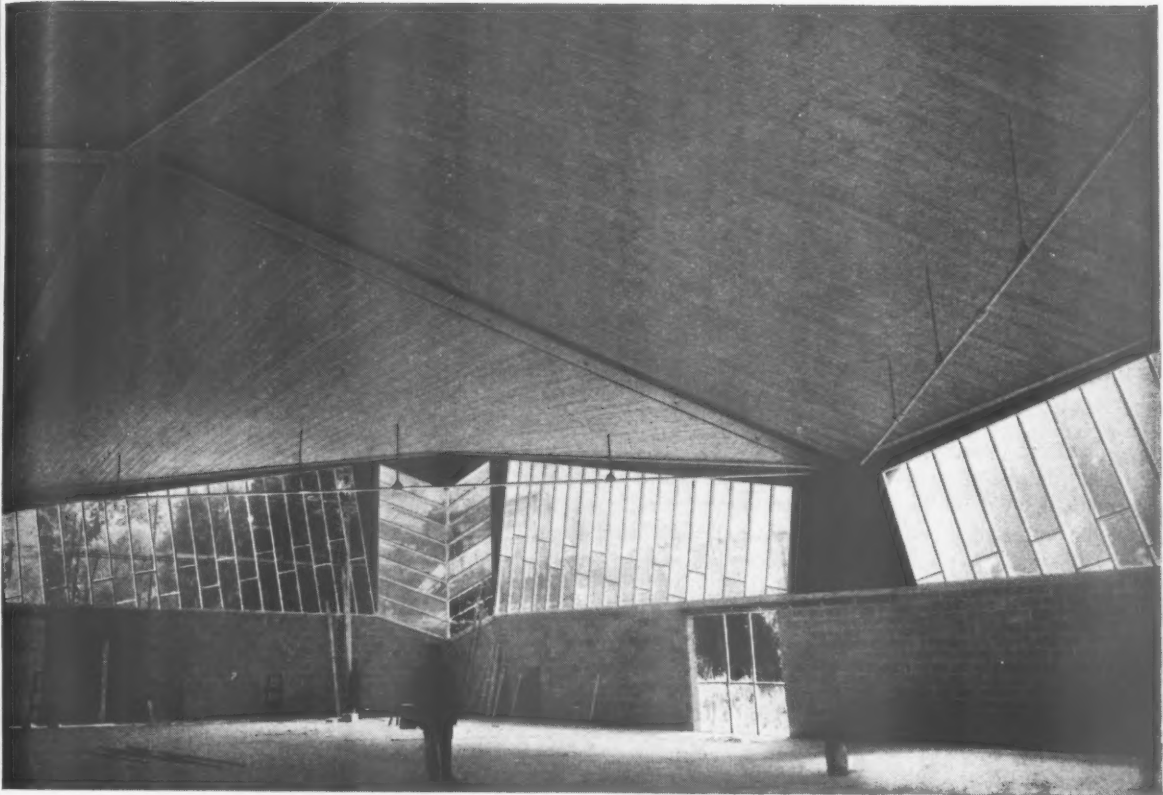


AROUND-THE-CORNER



**DOOR GEAR CRAFTSMEN
FOR 40 YEARS**

HYPERBOLIC PARABOLOID ROOFING



This unique example of timber roofing, has been erected for the Wilton Royal Carpet Factory. The roof consists of four timber shells, each measuring over 57 feet square.

ARCHITECT: Robert Townsend, F.R.I.B.A.
CONSULTING ENGINEERS: Timber Development Association
SIZE: 115' 10" square
HEIGHT: 18' 0" column head
COVERAGE: 13,420 sq. ft.
CONSTRUCTION: Three layers of boarding nailed together

Before you decide . . .

please do not hesitate to consult the T.D.A. who will gladly supply you with information on the uses of softwoods, hardwoods, plywoods, modern timber design and the names of timber fabricators.

CONSULT TDA



This advertisement is produced to B.S. 1311, 1956, governing Trade and Technical publications

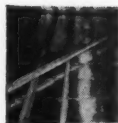
Use Dry Construction for distinctive CORNICE TREATMENT

When time and cost are vital factors, the employment of Dry Construction is a logical decision. There are no delays for drying out. Work proceeds according to plan. Costs are reduced to the minimum. Completion is achieved ahead of schedule.

'Paramount' COVE

is a factory-made cornice that is easy to cut, simple to fix and low in cost. Its simple but attractive lines greatly enhance the appearance of any room. Its use eliminates unsightly cracks that often appear between walls and ceilings. Being a "dry" product, decoration can be carried out immediately.

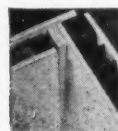
Other Blue Hawk Dry Construction Materials:



'Paramount'

INSULATING PLASTERBOARD

for efficient thermal insulation.



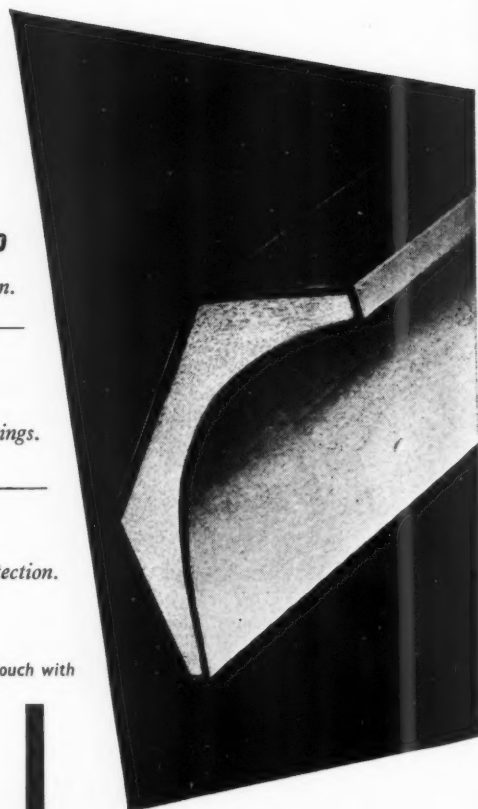
'Paramount' DRY PARTITION

for interior walls and linings.



'Paramount' PLASTERBOARD

for greater fire protection.



You can save substantially by using DRY CONSTRUCTION, for full particulars, get in touch with

DRY CONSTRUCTION DIVISION

THE

BRITISH PLASTER BOARD

(Manufacturing) LTD

BATH HOUSE 82 PICCADILLY, LONDON. W 1 TELEPHONE: GROSVENOR 8311.

DRI-SIL silicone masonry treatments

- * Keep buildings dry
- * Prevent damp and deterioration caused by weathering
- * Keep buildings clean
- * Prevent staining and streaking
- * Do not block the pores of building materials, thus do not inhibit "breathing"
- * Maintain thermal insulation of buildings by preventing the absorption of moisture by the walls
- * Are effective for many years, thus reducing maintenance costs
- * Are easy to apply by brush or spray

For new buildings



OFFICES OF DOCK LABOUR BOARD
by courtesy of Frederick Gibberd

For old buildings



ALL SAINTS' CHURCH, HASTINGS
by courtesy of the Rector and consultant Architect

**Proof of the
effectiveness of
these treatments
is shown in
this table**

		% Water absorption after 24 hours immersion	
		Initial test	Retested after 3 years' natural weathering
Sandstone	untreated	7.0	6.2
	DRI-SIL treated	0.1	0.2
Cement Block	untreated	6.0	5.9
	DRI-SIL treated	0.4	0.7
Common Brick	untreated	20.0	20.1
	DRI-SIL treated	0.1	0.3

All over the country DRI-SIL treatments
have been used on many buildings, large and small, old and new.
Use a DRI-SIL silicone to guarantee the quality

These firms supply
water-repellent masonry treatments
based on DRI-SIL silicones

Allweather Paints Ltd, London, WC2
Atlas Preservative Co Ltd, Erith
Isaac Bentley & Co Ltd, Manchester
Lewis Berger (Gt. Britain) Ltd, London, E9
Bitulac Ltd, Newcastle-upon-Tyne
S. Bowley & Son Ltd, London, SW11
British Paints Ltd, Newcastle-upon-Tyne
Byrom Paint & Varnish Co Ltd,
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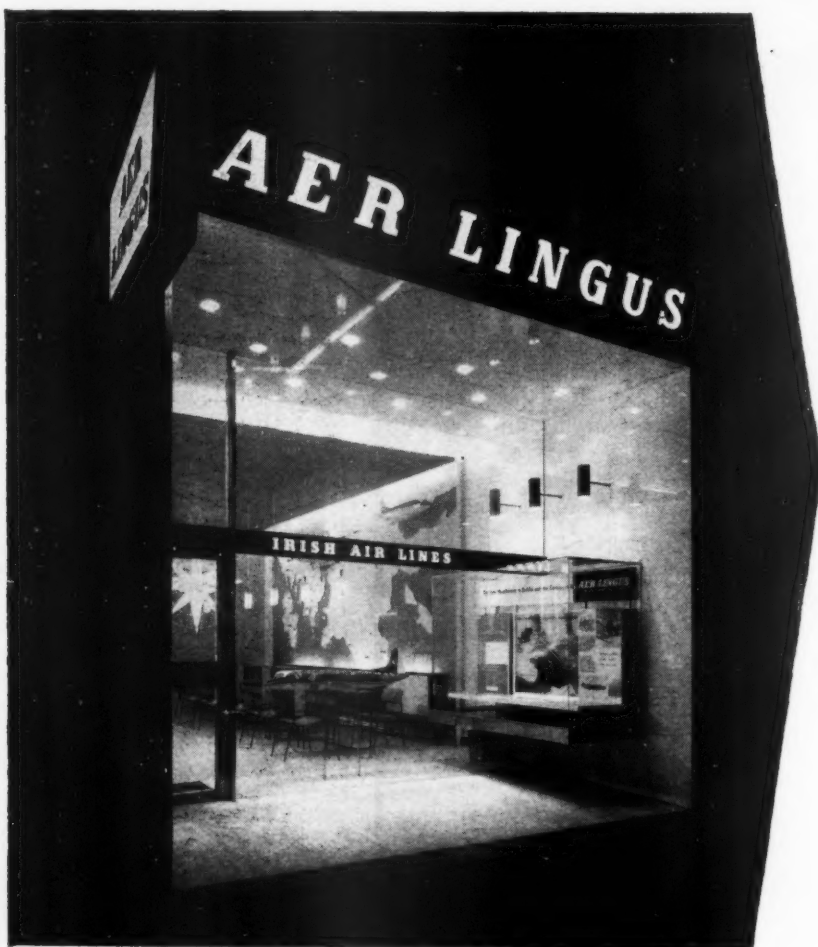
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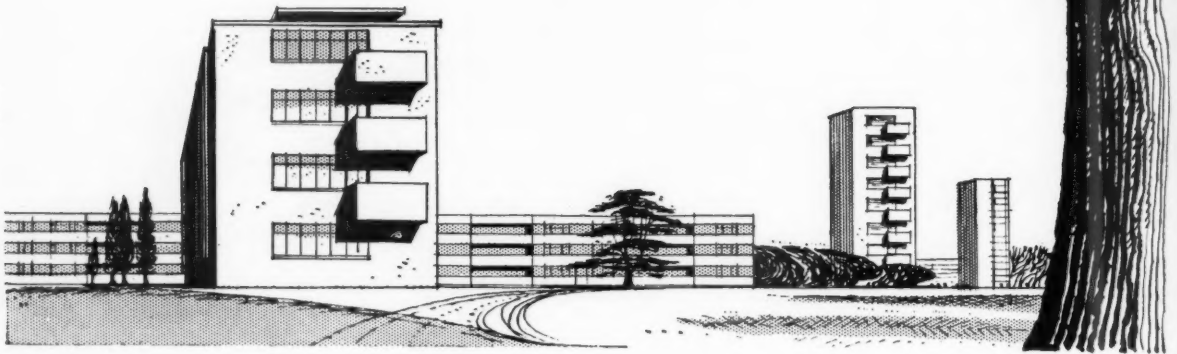
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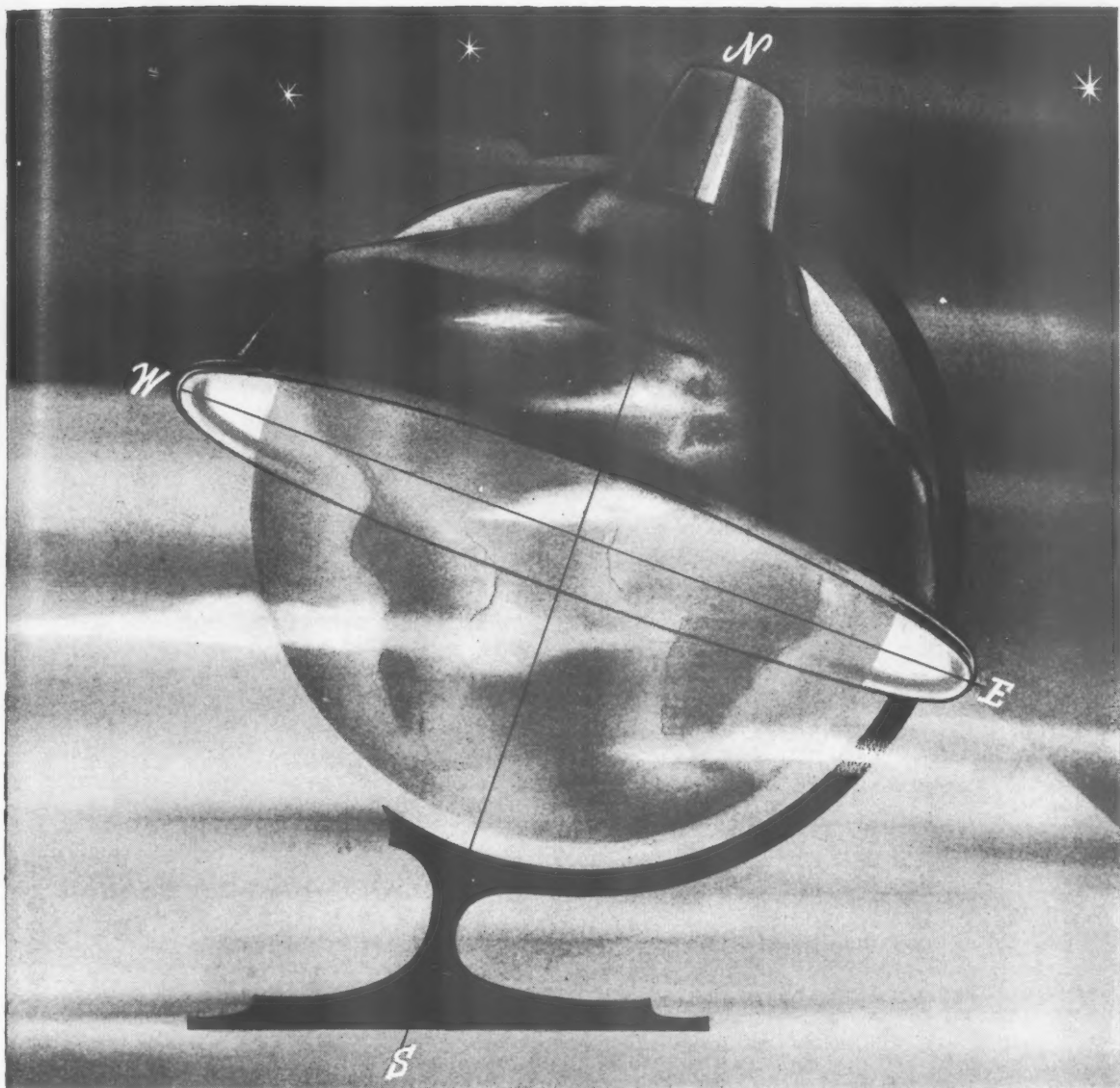
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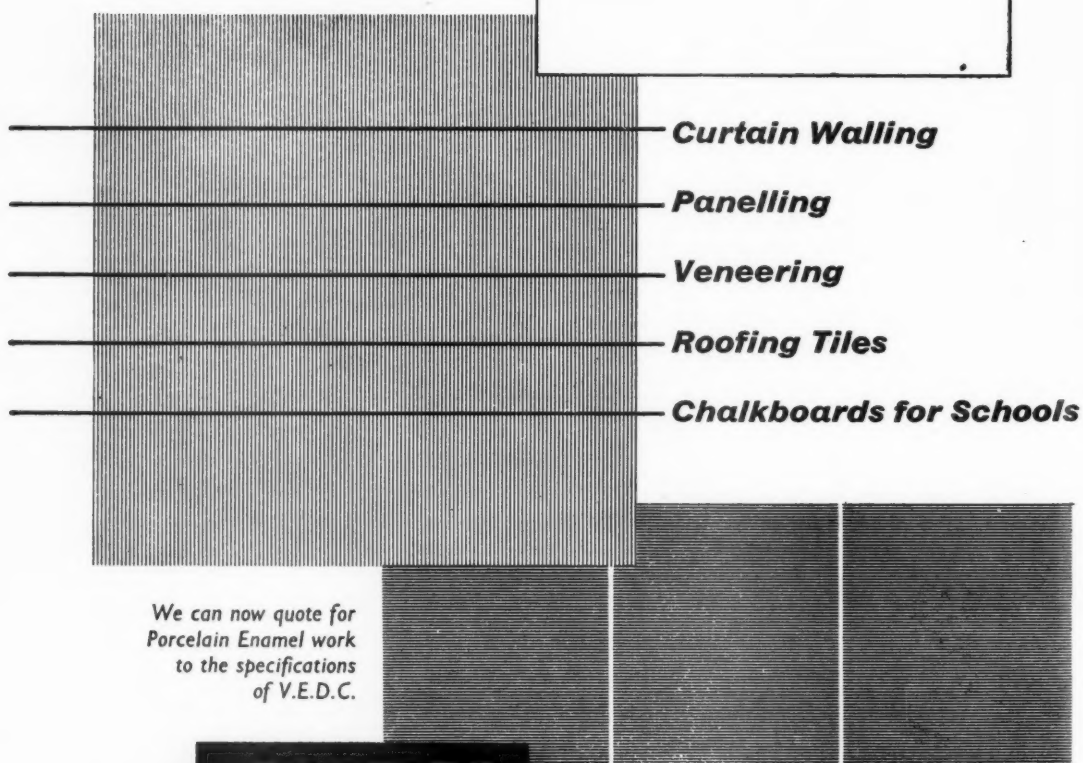
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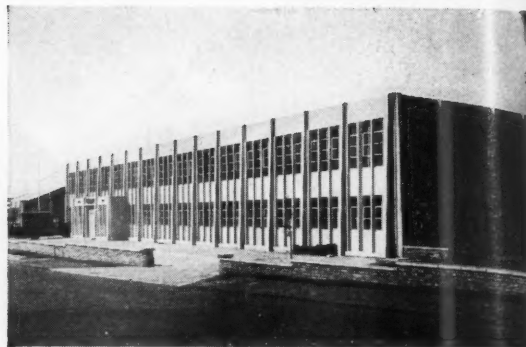
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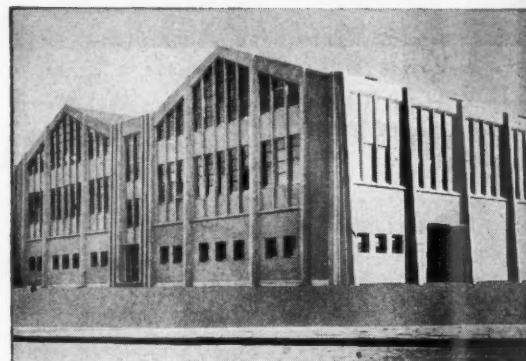
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Interior: Central Engineering Workshop, Messrs. Bryant & May Ltd.
Architects: Messrs. Hastie, Winch & Kelly

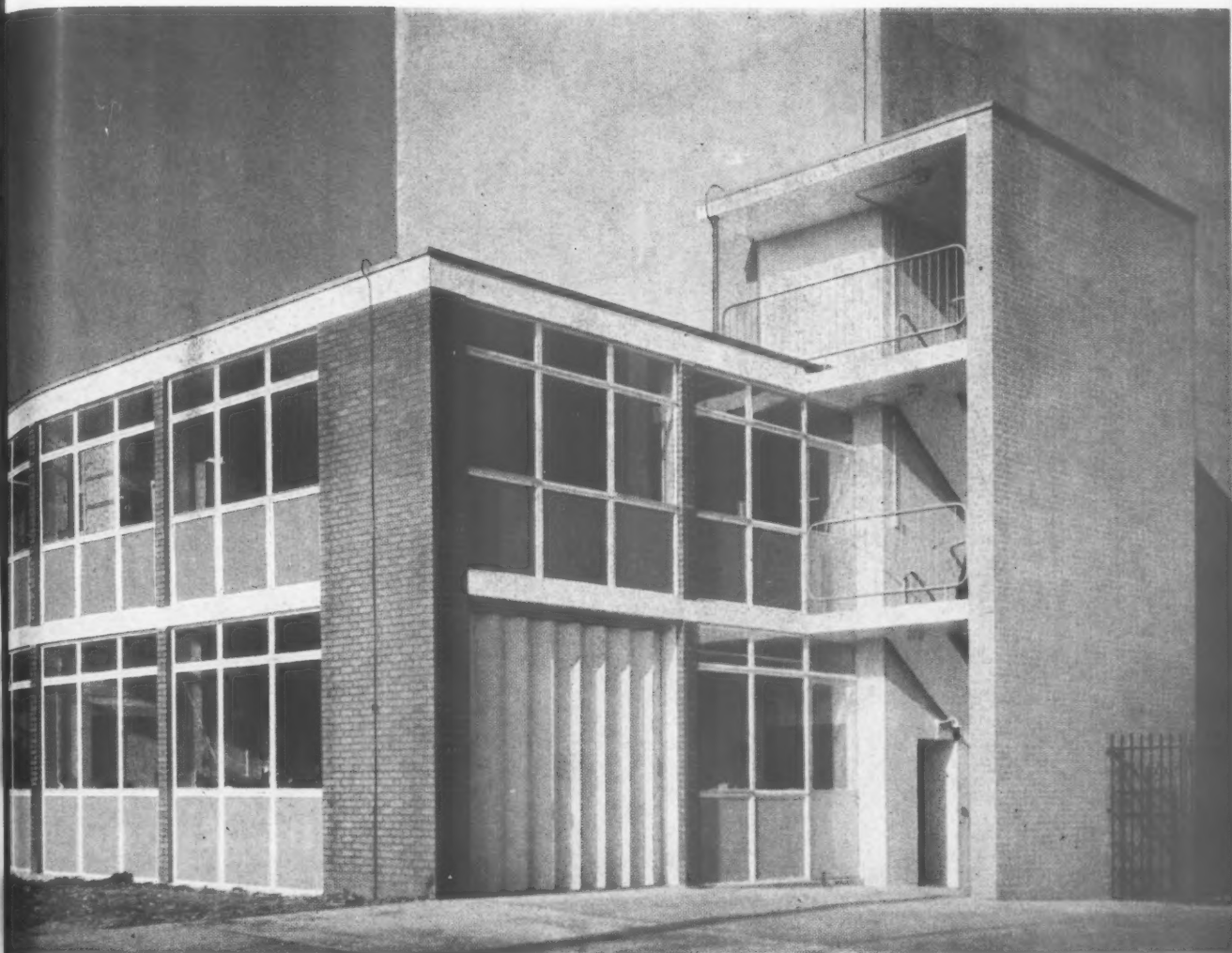


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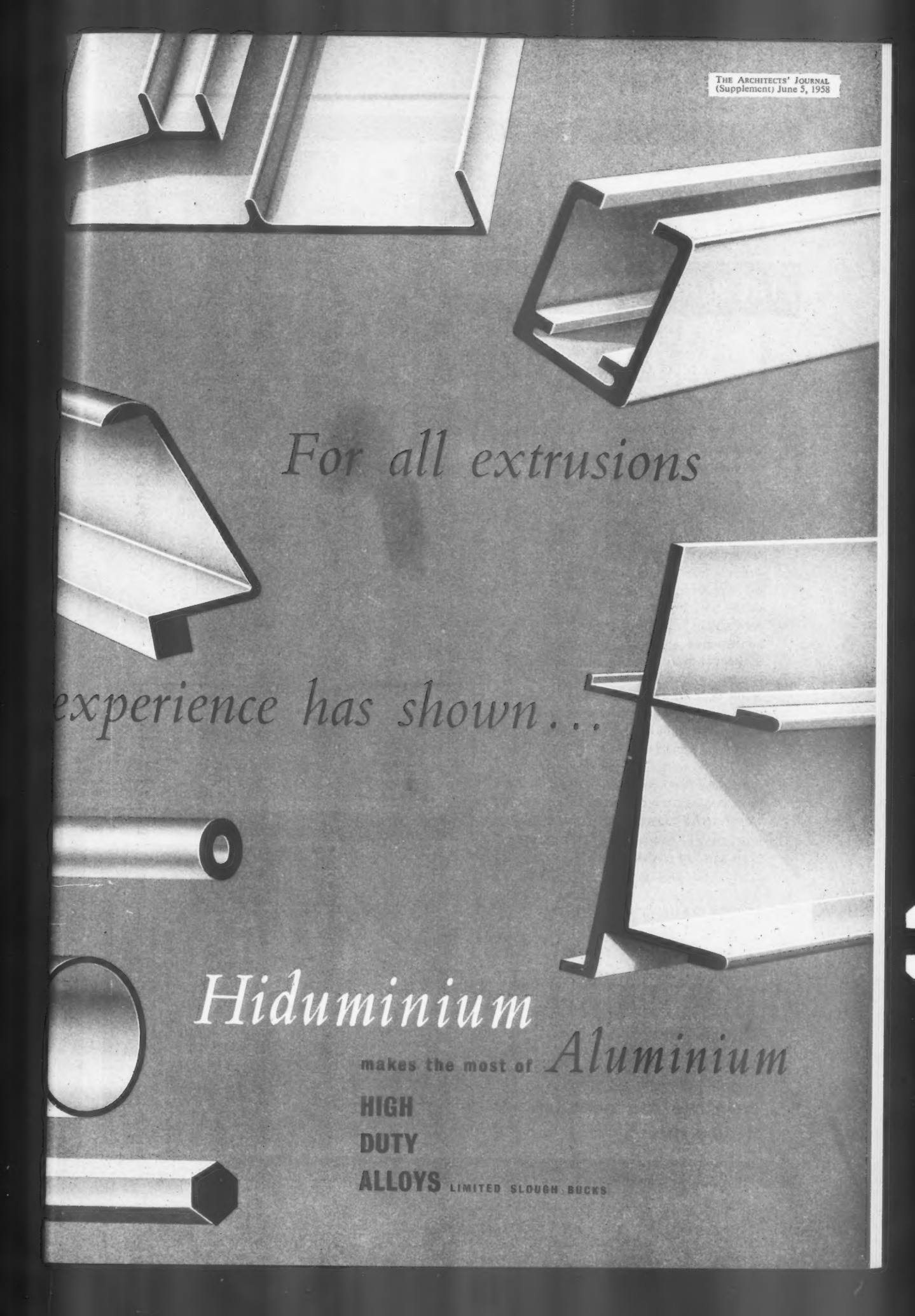
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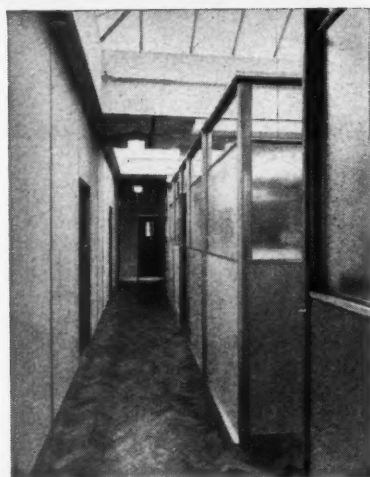
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One of the corridors, showing full height and free standing partitions.



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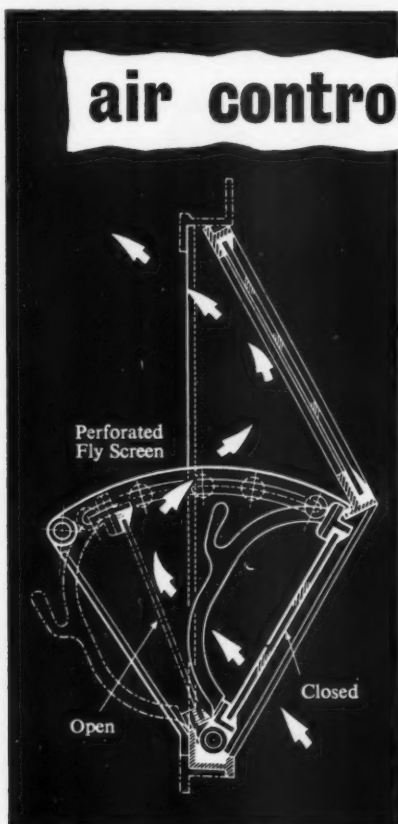
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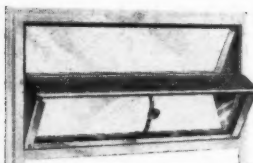
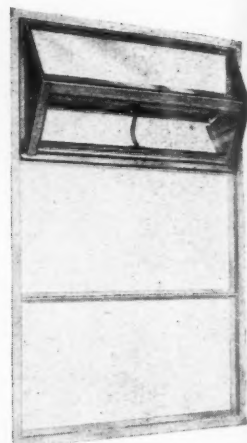
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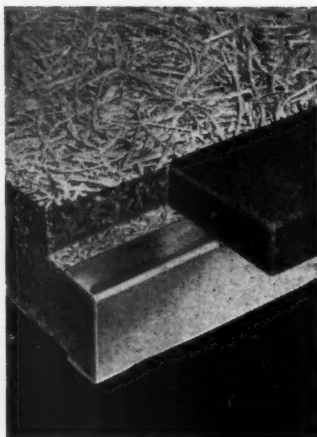


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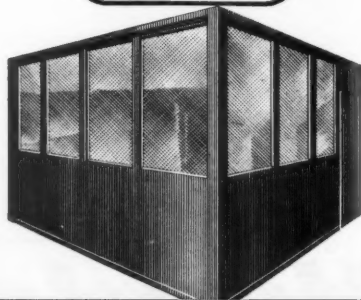
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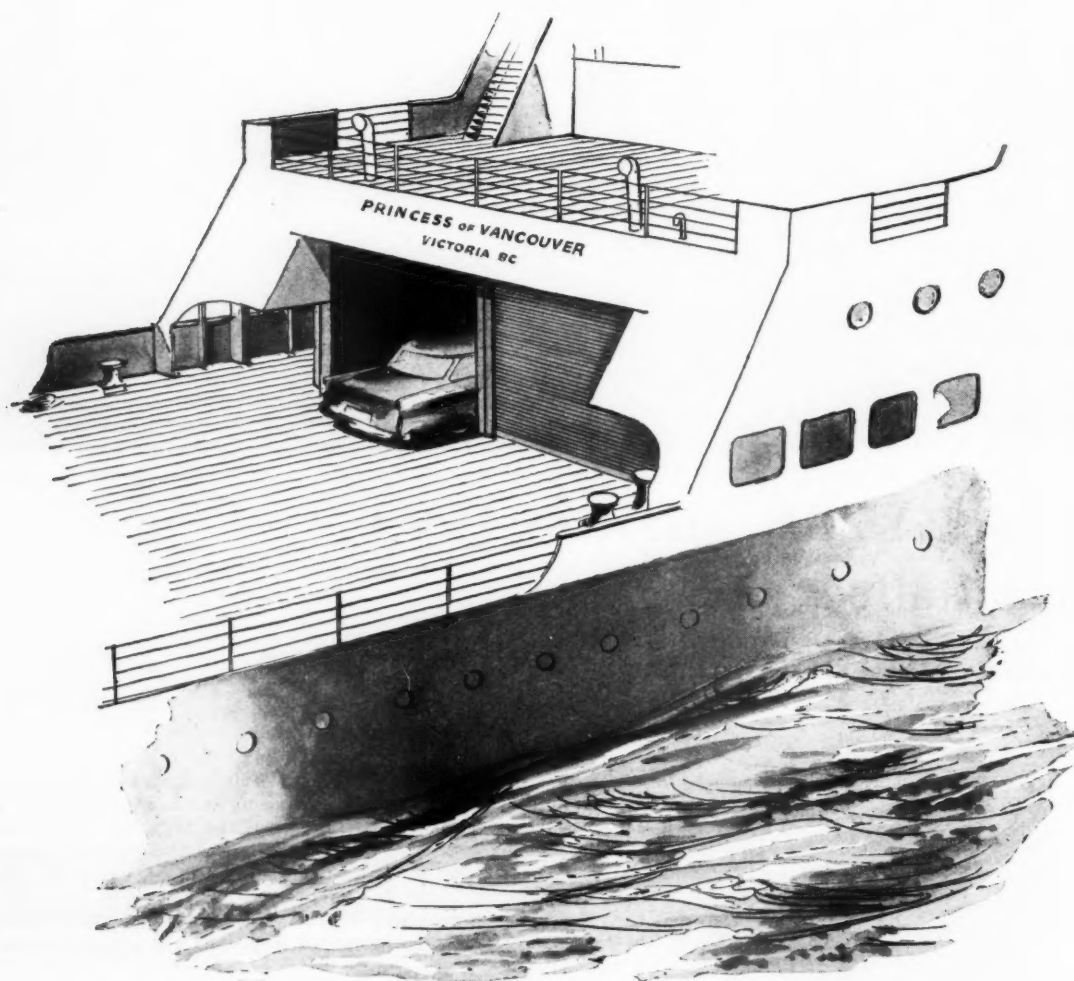


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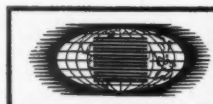
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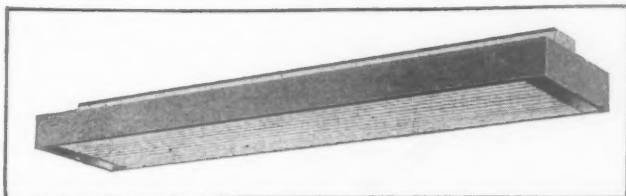
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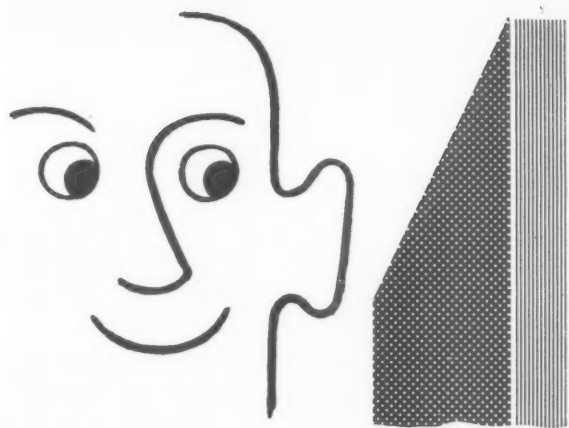
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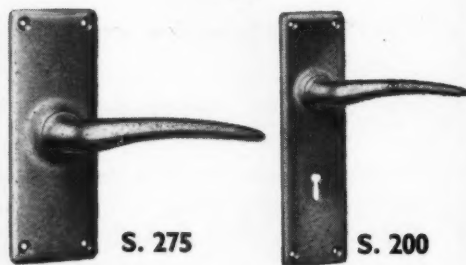
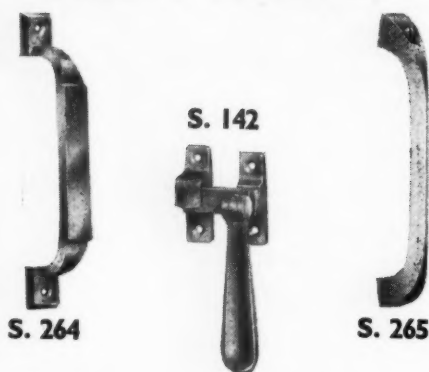
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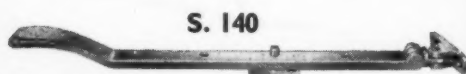
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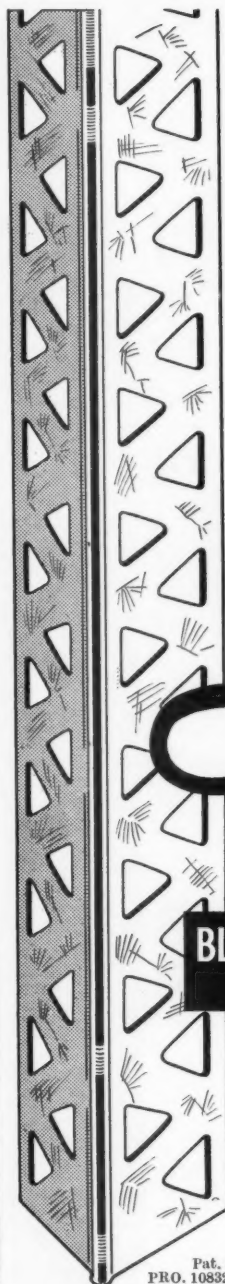
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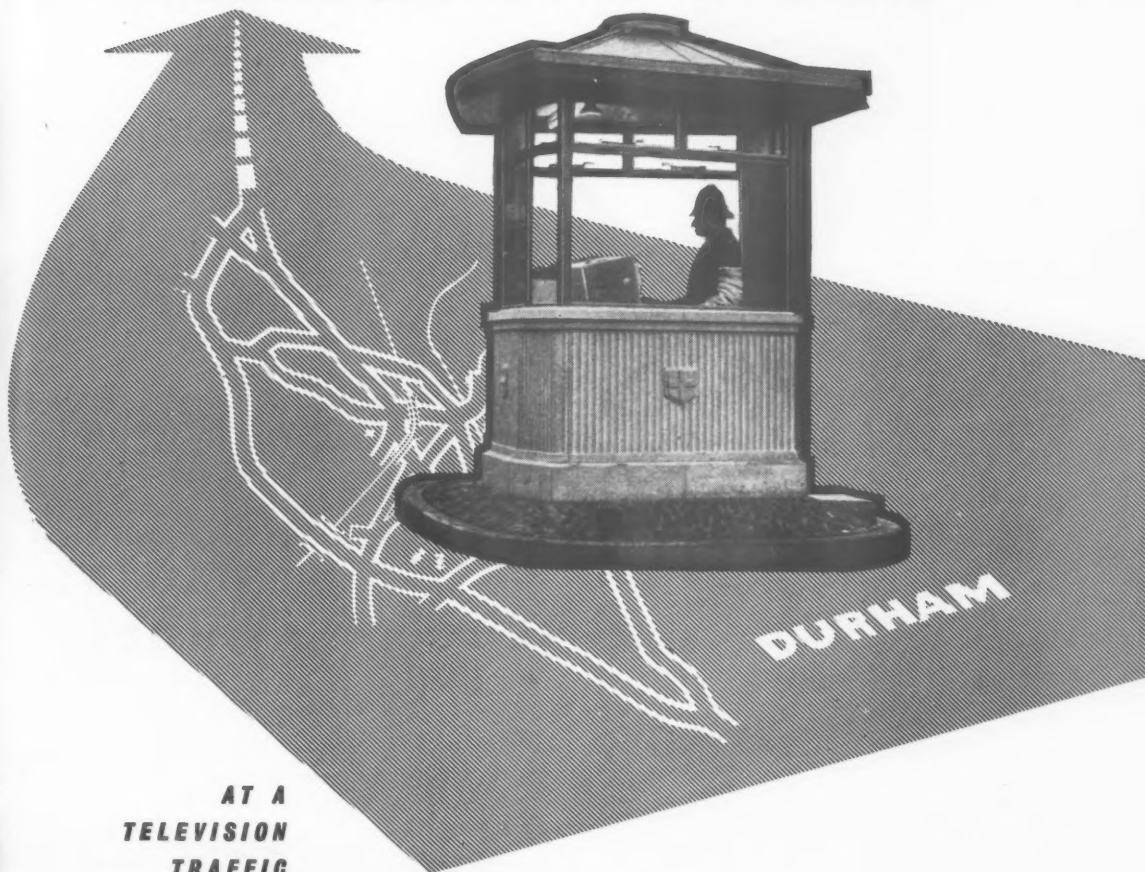
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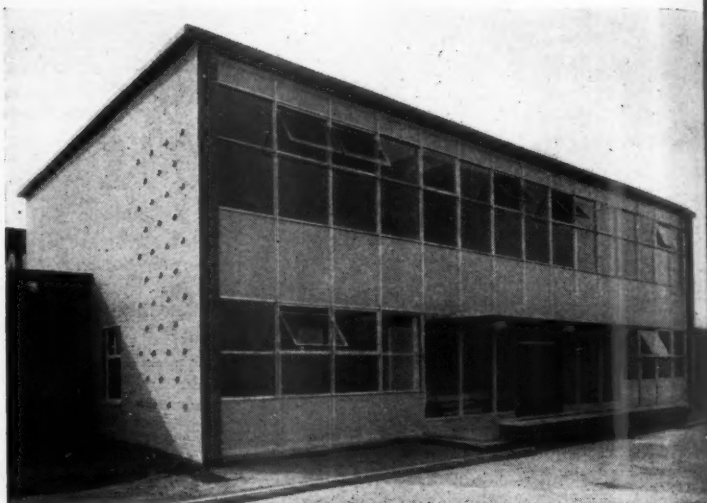
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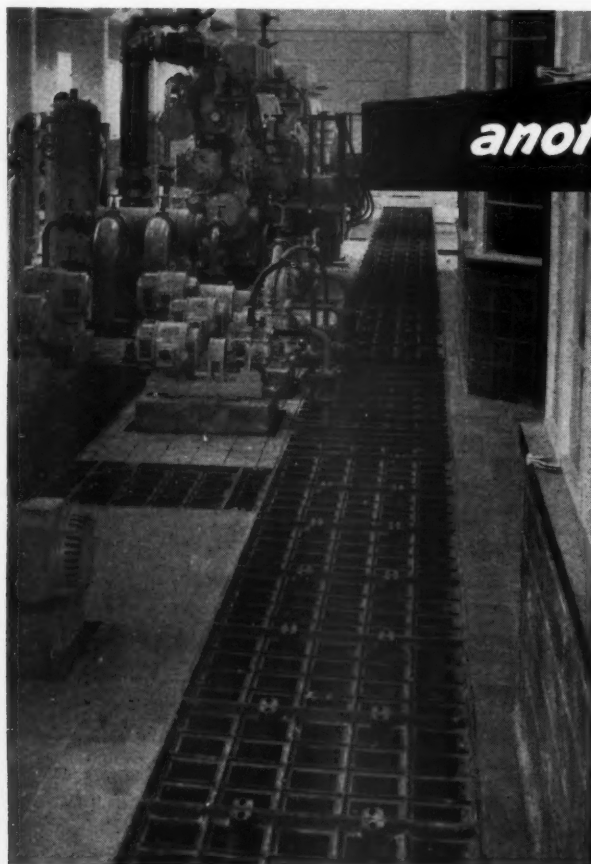


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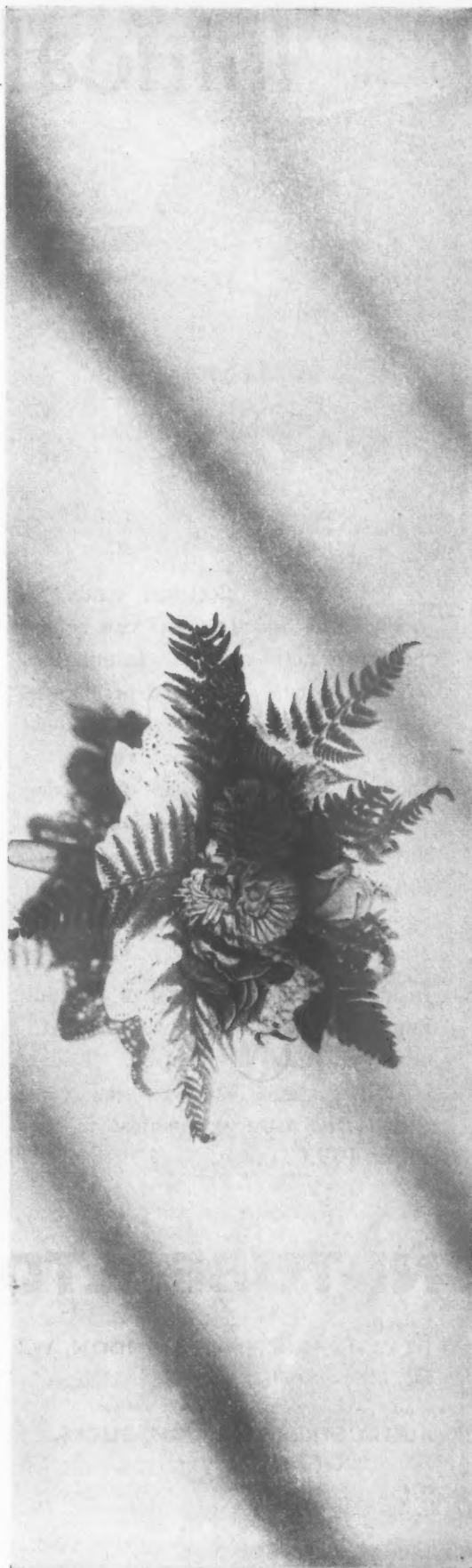
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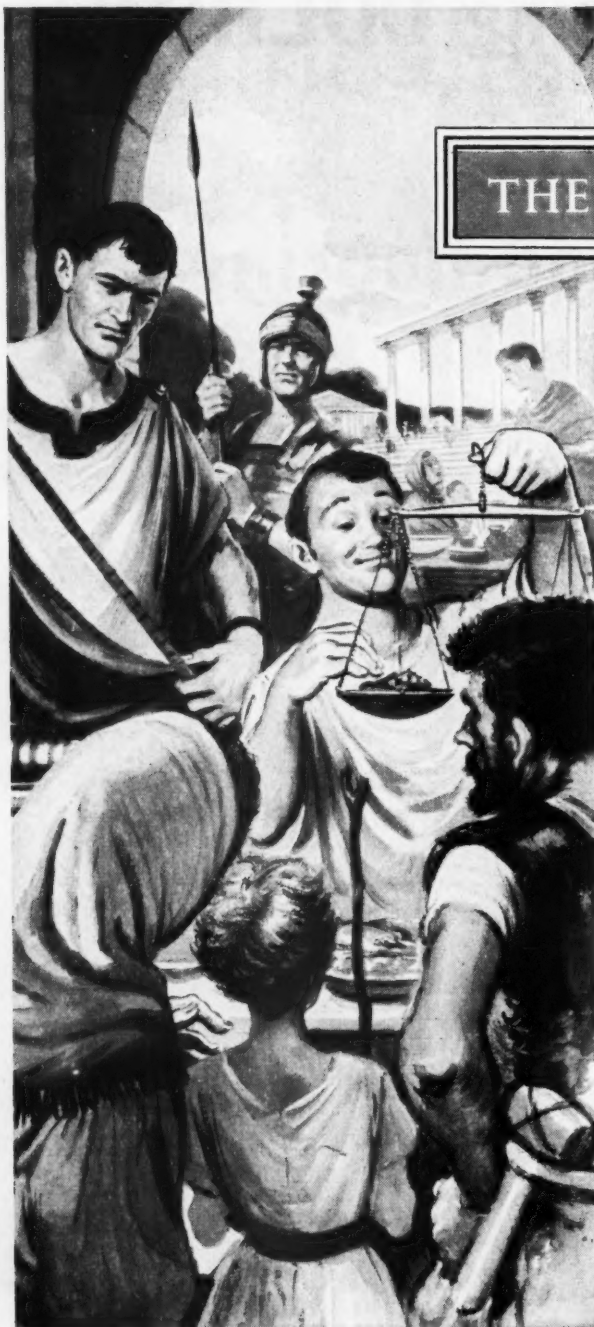
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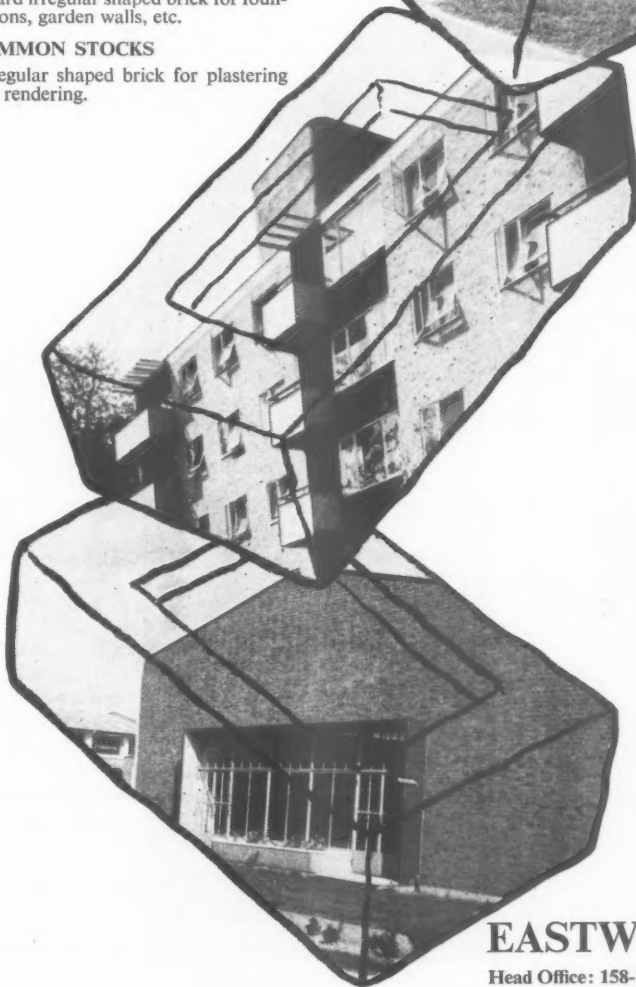
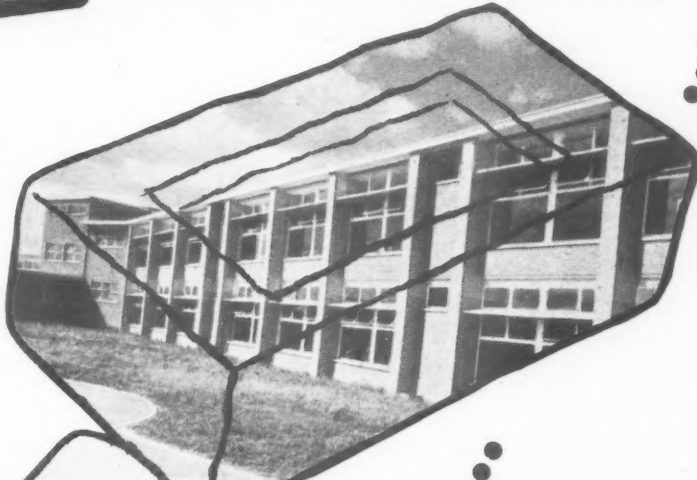
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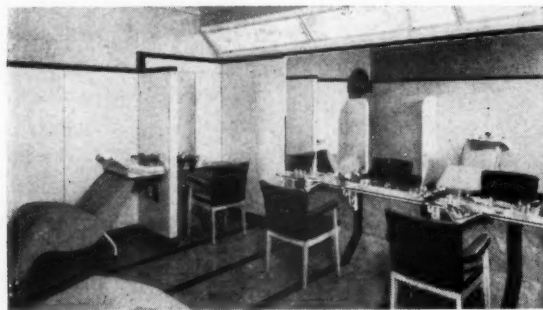
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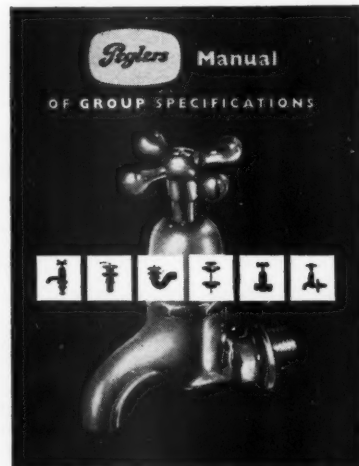
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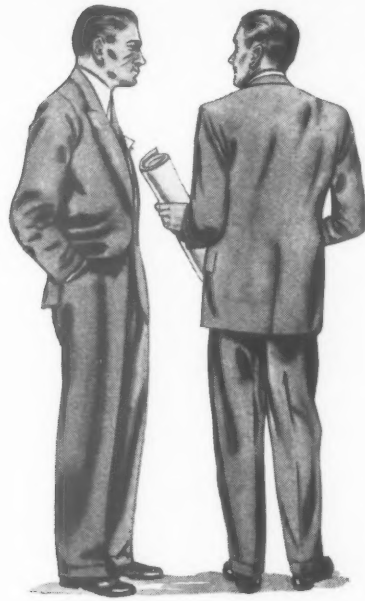
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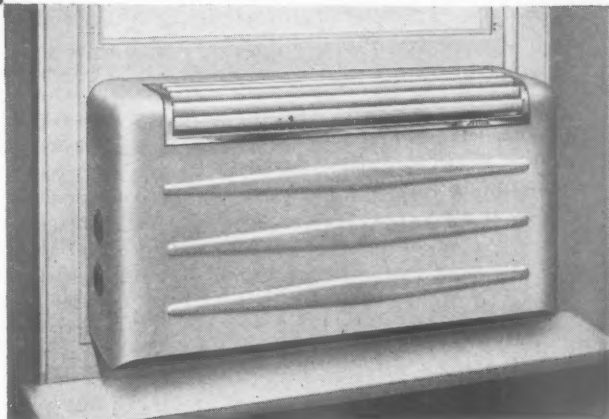
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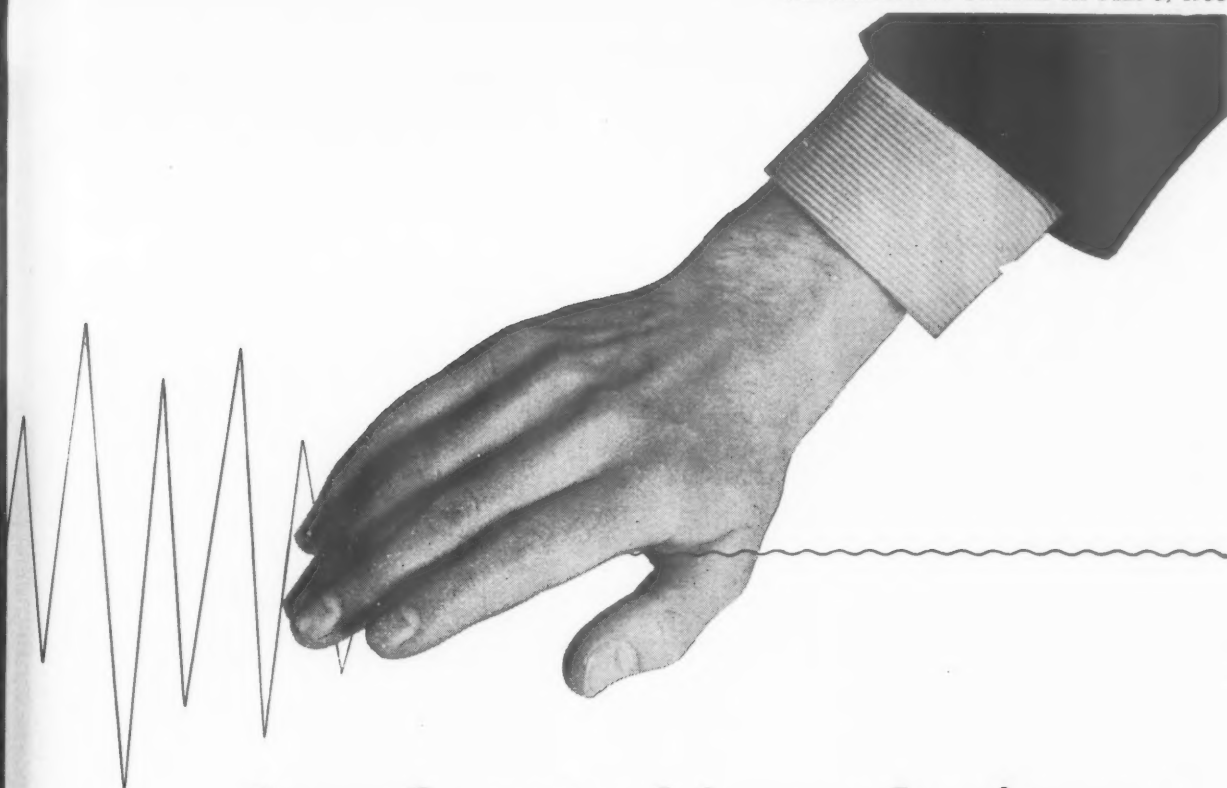
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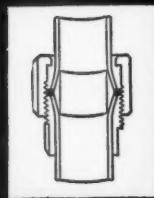
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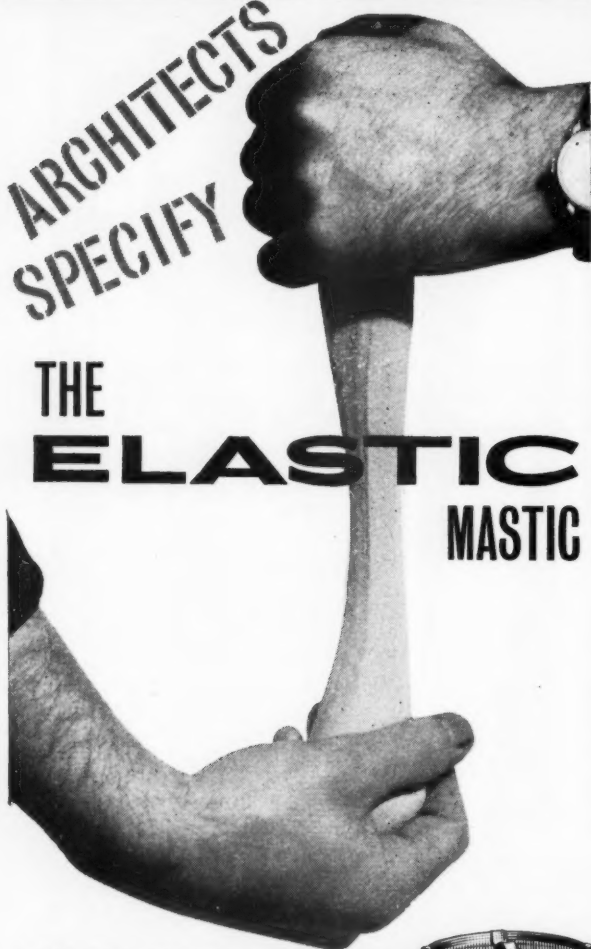
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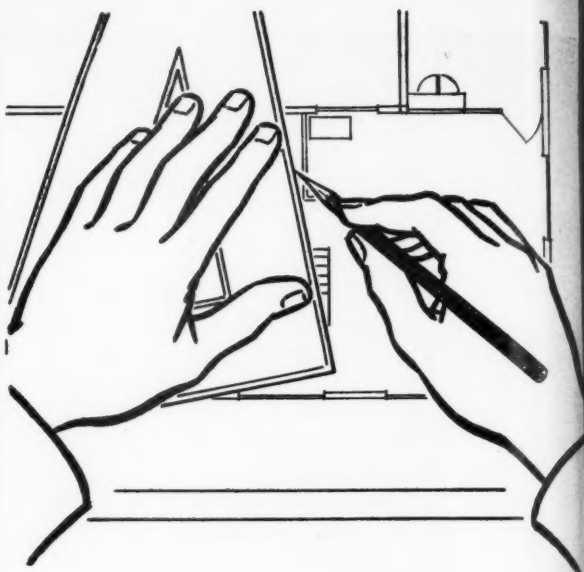
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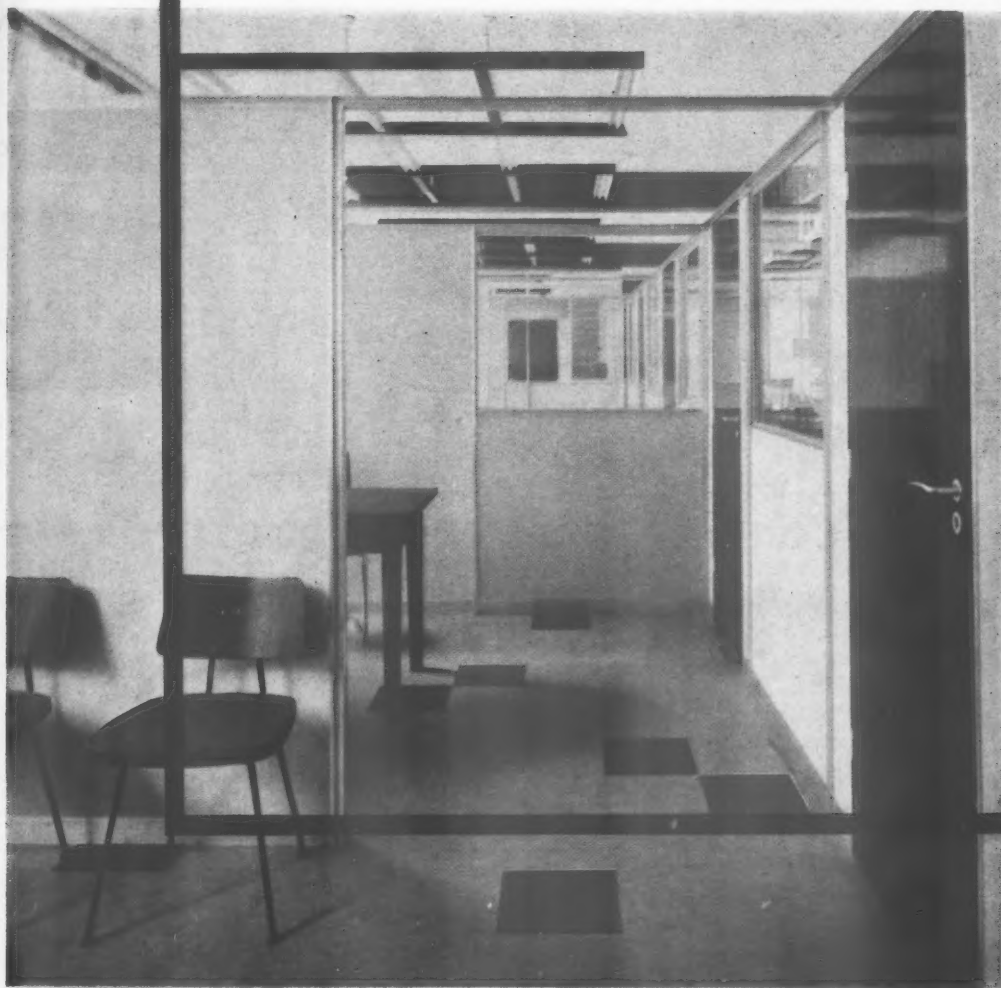
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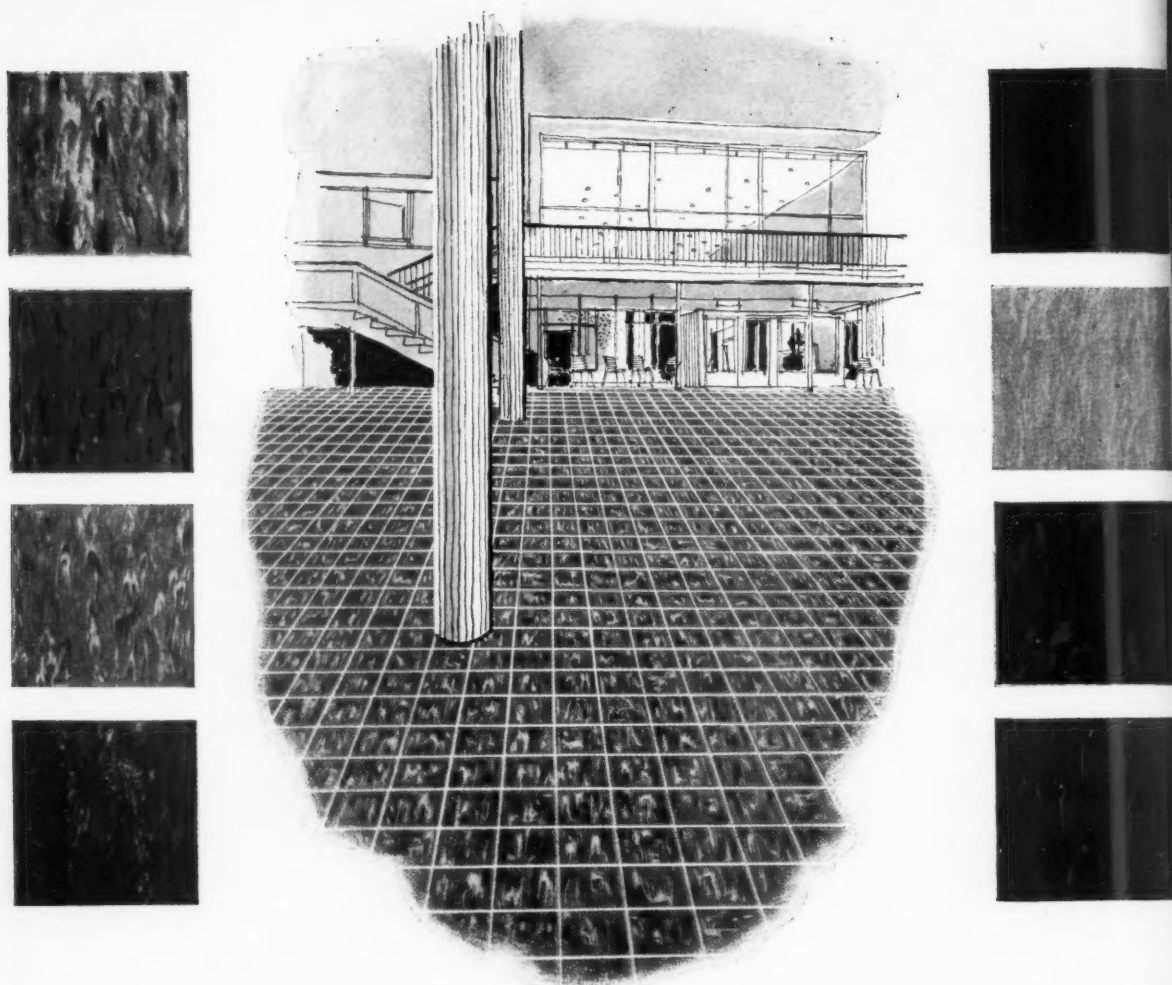


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THE ARCHITECTS' JOURNAL

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NOT QUITE ARCHITECTURE

TROOPING THE COLOUR AT CHELSEA

If Chelsea Flower Show has any influence on gardening fashion, and is not simply an annual orgy, it should be easy to predict an early return to the formal garden after this year's show. For the exhibit that stopped circulation in the main avenue and brought the loudest cries of satisfaction (such as, "Oh those standard cherry pies!") was undoubtedly the French vegetable garden presented by Vilmorin-Andrieux. Here fruit trees trained with military precision mounted guard over rectangular, box-edged parterres filled with chubby cabbages, lettuce and french beans, while in the foreground african marigolds, as neatly packed as oranges in a box, scarlet salvias and cherry pie formed fours in a display as brilliant as the Trooping of the Colour. I could go on and on about this garden, but for a nagging thought of the ceaseless work involved in keeping such a garden in the style to which it is accustomed. It is because they are labour-saving that flowering shrubs are booming.

Is it purely this consideration, however, that makes our garden designers and landscape architects so shrubby-minded? Designs for small gardens in the exhibition of the Institute of Landscape Architects all seemed to follow certain anti-formality rules, which themselves have become a formality. The small "informal" garden of today goes like this: irregular quadrilateral of paving outside the house, followed by a lawn bordered by beds which get narrower as they get further from the house (perspective), and broken into by a promontory of flowering shrubs which has the function of preventing one seeing the end of the garden from the house. This is a cardinal rule—and quite a good one too, for it creates a little sense of mystery about the end of the garden, while providing concealment for the compost heap and the bonfire.

Some of the larger landscaping designs for factory layouts seemed to suffer from the same vague craving for "informality,"



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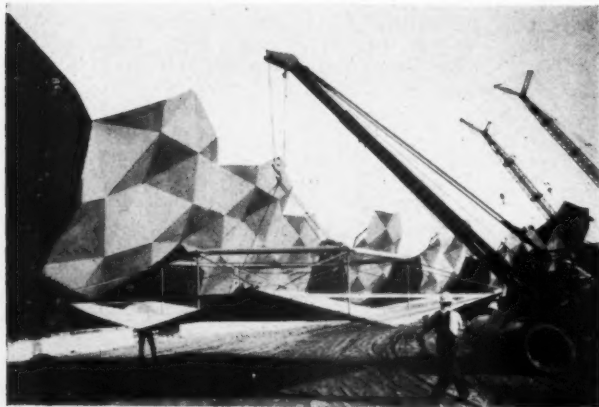


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The Comprehensive Designer

Richard Buckminster Fuller, who is to give the Annual Discourse at the RIBA tonight, is a man of many parts, only one of which is well known to most architects. Through seminars and exhibitions, magazine articles and the word



of his disciples, he has become imprinted on the architectural consciousness of the post-war world as the master of the geodesic space-frame dome. In this field, his latest and most spectacular achievement is the Union Dome, at Baton Rouge, Louisiana, seen under construction above, 375 ft. in diameter (and thus the world's largest as we go to press), built out of folded and externally-braced hexagons of steel sheet, to house repair and maintenance shops for a tank-car company. To have designed and seen built such a structure would have been sufficient to crown many an architect's life-work, but Fuller has by no means devoted his whole career to this one type of structure, as Nervi may be said to have devoted his to concrete vaults. A long process of investigation and thought about problems of shelter and living standards, lasting from the early Twenties to the late Forties, preceded Fuller's decision that domical frame structures offered the most rewarding field for development; a quarter century of "Experimental Probing of a Comprehensive Architectural Initiative," to quote the title of tonight's talk. It is as an experimental prober, a comprehensive designer, rather than the established master of a single building-type, that he will speak.

leading to lack of shape, serpentine paths—and shrubberies of course. Here the value of a few mature trees on the site of any industrial building was very visible. Perhaps it was for this reason that Sylvia Crowe's



French Formality

landscaping of the new atomic power station at Bradwell-on-Sea seemed so simple and satisfactory. She had willow trees in this devastated area to start with, and these she proposes to thicken up into a shelter belt, to conceal the lower and inevitably messier industrial buildings on the site, while leaving the main building to tower—as indeed it has to do—impressively above.

Rather a different aspect of the problem was treated by B. T. & J. Siedlecki and M. M. Laurie in their design for transforming Leicester Square. The architects propose "to transform the present fenced-in, dismal, keep off the grass space . . . into a central Piazza capable of accommodating large day and night crowds and providing massed flowers, seats, vantage points, kiosks and additional parking space." To do this they have produced a three-tier plan, with ramps leading up to the highest paved area at the south of the square, through which the existing trees would protrude as from well-holes. The plan gave me a sense that the architects had tried too hard, and produced a scheme which is too fussy for this feverish traffic hub. A simpler plan, more on the lines suggested by Donald Dewar-Mills in the *Architectural Review* of October, 1951, would be more satisfactory.

Back to Chelsea, and its main exhibit—the flowers. The smells and colours of this year's marquee are already in limbo, but some new arrivals there were memorable. The hybrid lilies become more and more varied, and this year a huge, beetroot red *Auratum* was outstanding: but the hybrids have not yet excelled their parents. Among new, not merely "giant" annuals, I would place first the *Arctotis* hybrids, big, stout daisies, with scrolls of toothed leaves, which have achieved all the fashionable colours, even beige. Most beautiful new plant: a hybrid bramble which won an award of merit, its long sprays of trefoil leaves carrying every 2 in. a white, crinkled flower the size of a cistus blossom, crowned with yellow stamens—*Rubus tribbus* x *R. delicosus*. if anyone wants to know.

SHEILA LYND

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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous.

The Editors

THE RIBA AND A MINISTER GET DOWN TO BRASS TACKS

WHEN Mr. Henry Brooke, the Minister of Housing and Local Government, attended a meeting at the RIBA recently he set a precedent that could usefully be followed often, and by other Government departments too. It was a frank and informal discussion on what is worrying the profession about town-planning as at present operated. Five questions were tabled and taken in turn: Is planning working satisfactorily from the point of view of the architect? How should high buildings be controlled in London? Have the new towns been successful architecturally, and if not, why not? Is there anything in the system of planning control which architects think should be changed? Should there be any aesthetic control?

One of the ten architects invited to meet the Minister spoke for a few minutes on each question, and then there was a free-for-all discussion in which the Minister joined, and sometimes Dame Evelyn Sharp, his Permanent Secretary. As a technique of exchanging views and airing grievances it was admirably devised, and although the initiative came from the Minister, the RIBA must be given credit for organizing it efficiently and for choosing a thoughtful and articulate group of architects to meet him,* representing a great variety of experience.

There seemed to be no disadvantage in architects being obviously divided in their views on several of the topics; indeed, the Minister seemed to value the exchange of arguments between them that he heard; and he could not have failed to note the very strong feelings architects have about certain matters, notably about the way architects' designs are vetted by lay committees, guided more often than not by technical officers without architectural qualifications and without the architect having a chance to explain them.

The discussions about controls were the most vigorously conducted, and some very interesting figures emerged during the Minister's interventions in them. Planning appeals now total about 600 a month, and the number is increasing—the

* They were, besides the President who was in the chair, Grenfell Baines, Hubert Bennett, Peter Chamberlain, Sheppard Fidler, Frederick Gibberd, W. G. Holford, Denys Lasdun, A. J. P. Powell, Peter Shephard and John Stillman. Besides Dame Evelyn Sharp, the Minister brought with him an under-secretary, Mr. H. F. Summers, and his chief architect, J. H. Forshaw.

chief reason why the procedure cannot easily (as several architects demanded) be speeded up being that the supply of properly qualified inspectors is limited. Thirty per cent. of these appeals are concerned with applications to build individual houses in rural or green belt areas; another 20 per cent. are concerned with the siting of caravans. One appeal in three is allowed, but a higher proportion when the appeal is against the rejection of a building on aesthetic grounds.

The operation of controls was only one topic dealt with; but the exchange of views on this was enough to show the value of informal meetings with Ministers and their advisers. Should not the RIBA now, besides encouraging repeats of last week's performance, itself take the initiative and propose similar meetings with, say, the Ministers of Transport, Works and Power and the heads of other official bodies who don't hear nearly enough of the architect's point of view?



EGGS AND EGG-HEADS

Professor Waddington's AA talk on "Form and Pattern in the Biological World" could well start an orgy of organic architecture. It was all fascinating stuff in its own right, but ASTRAGAL started a little mild so-what-when comparisons were made between patterns in art and patterns on shells, stained tissues or coral. The most interesting thing shown was a short film of a single cell multiplying into a mass of dimpled buttocks, reminiscent of a collapsed rugger scrum. Also in this film we saw the growth of the bone structure of a chicken in the egg—some-

thing that must have humbled the architects present as they thought of the stumbling, awkward growth of framed buildings.

Professor J. D. Bernal, who proposed the vote of thanks, did not agree with the speaker that art is based only on biological and geometric forms. He reminded the audience that a lot of geometric form in art is technical in origin. He also drew a neat comparison between the dinosaur and the motor car, showing how the second is copying the first by becoming more complicated and excrescence-ridden, and evolving towards extinction.

A fascinating evening, with a discussion in which Professors Huxley and Young were as intimidatingly present as architects were conspicuously absent.

THE ARCHITECT'S ANSWER

Many architects will have rejoiced when president Kenneth Cross burst into *The Times* in reply to a criticism from Colonel Marriott. This gentleman, who is a builder, had said that "the architects' profession" did not recognize the need for management training. Mr. Cross replied by listing management courses in hand or to come, and by quoting examples of work done which show how the architect can achieve economy in building. "We accept in the RIBA," he wrote, "the need for vigorous and widespread action to promote business efficiency and good management. We are neither indifferent nor inactive and we recognize that still more can be done."

LIVERPOOL STREETS AHEAD

We may, after all, have the chance of seeing the Corb exhibition, which has been getting very good reports on its European tour. Early efforts to bring it to London failed because the cost would be £3,000 (including a rental of £800) and because London could not provide a hall large enough to take an exhibition of 6,000 sq. ft. Now it seems that the Walker Art Gallery, Liverpool, may have the show in the autumn. It is putting up some of the money and getting more from the Arts Council (£500), the RIBA (£400) and the MARS Group, which has made a final gesture to the master by throwing in the balance of the funds left at its dissolution. Even so, more money is still needed.

Once the exhibition is here it may be possible to get it to London. The enlarged Building Centre has room for it, but there remains the problem of funds.

BRISTOL-FASHION IN NORFOLK

David Percival, the Norwich city architect, has given his City Fathers a report of a year's work by his department. This is an excellent idea (Nelson Meredith used to do the same thing at Bristol), and ought to be copied by other local authority architects. It would be useful if such reports were also available to people outside the council, who probably have no idea of the services given by an architect's department.

MY FAYRE CHICKEN

The latest Lyons' transformation scene is at Marble Arch, where you will now find the Three-in-One restaurant. This is a development of Mr. Lyons' principle of making you decide more or less what you are going to eat before you sit down. There is an ante-chamber for mind-searching (steak, chicken, fried fish?); after that you go into a room which serves nothing but your choice. This must make for easier planning of catering, and from the diner's point of view it doesn't really matter when the dithering is done.

The décor? The designer, Sam

Horowitz of Chicago, calls it "stimulating—but not *too* stimulating." It is in the Dolcis idiom, slightly flattened by overall lighting (in sharp contrast to the Coventry Street Corner House, where your table is an island of light in a sea of gloom). The significant thing, I suppose, is the absence of romantic appeal—unless you're eating chicken. (There is a touch of whimsicality in the "Chicken Fayre.") But I'm forgetting the new touch of glamour. The girls have been made even nippier—"like Audrey Hepburn on skates," says Hardy Amies, who designed their outfit. Their pleated skirts, uncluttered neckline and absence of waist seam (facts checked by my secretary) give an effect of social uplift. ASTRAGAL feels a slight twinge of regret and hopes that there will be no inhibitions to spoil the nippy backchat.

AROUND THE GALLERY

So Hugh Molson refuses to have Grinling Gibbons' statue moved from its National Gallery site to make way for Sir Walter Raleigh. Good. This minor victory for Trafalgar Square should be followed by a campaign to make good use of the site of Hampton's old "prefab" shop. This, says Professor Lionel Robbins, should be bought for the future expansion of the National Gallery which it adjoins. (Apparently it is no longer needed for development by the Canadian Government.) Although the Professor is not necessarily right in supposing that commercial development here would be a "danger," the chance of doing something for the artistic life of the metropolis seems too good to be missed.

THAT'S BAD, THAT'S GOOD

Bad news for private architects. Ross and Whitchurch RDC is to finance the housing improvement grants it makes "by insisting that applicants employ members of the council staff to do the architect's work at a fee of ten per cent. of the contract sum."

*

Good news for private architects. Aethwy RDC, in Anglesey, has decided that all plans of development submitted to the council must bear the signature of a qualified architect, because they feel that a number of the unsigned plans they are receiving are the work of those who are "already fully employed elsewhere and wish to



The ceiling of a conference room in the offices of the Federazione di Consorzi Agrari, Rome, designed by Aldo della Rocca, showing an interesting, if slightly jazzy, departure from normal ceiling lighting.

remain anonymous—people working for the County Council might be doing this sort of thing on the side."

*

How pleased we should all be if the Aethwy ruling became a model bye-law for the country, and every plan submitted everywhere had to be the work of a qualified architect. County and metropolitan boroughs please copy.

A GOOD START

ASTRAGAL took advantage of a recent trip to Scotland to look in at Cumbernauld for the press conference on the planning proposals for the new town (reported on page 858). His first impression is that progress is going to be rapid, and that the pioneer residents will not have to endure as many hazards from incomplete facilities as were suffered elsewhere. His second is that it is rare and refreshing to find the lay Corporation, and particularly its chairman, Sir Gordon Macmillan, so zestfully sharing the conviction of Hugh Wilson's team in the higher density concept.

*

The Scottish Department of Health has chosen a site roughly in the right place, and the very compact overall scheme for a hilltop town is carefully conceived to create a truly intimate scale in all areas, including schools and housing. A native architect (who feared that, in detail, the scheme might

not have a consistent character true to Scottish influences) assured ASTRAGAL that in principle at least the scheme is much truer to the traditions of that windswept land than either "London-type mixed development" (to which there seemed to be some similarities in the first housing area) or the wastes of East Kilbride.

HAUSSMANN'S PARIS

The replanning of Paris by Haussmann under Napoleon III, which was at its peak of activity exactly a hundred years ago, is probably, along with the replanning of Rome under Pope Sixtus V at the end of the sixteenth century, the most famous enterprise of its kind. But most people know little more about it than they can see with their own eyes.

*

Those who like studying architecture in terms of politics are probably familiar with the story that the layout of the radial avenues of Paris was determined by the desire to control the biggest mobs with the smallest number of guns, and been fascinated by Daumier's cartoons of evicted householders and rapacious landlords, but many other aspects of Haussmann's work deserve just as much attention, which they at last get in an admirable book by Professor Pinkney of the University of Missouri.

Crowd control, it appears from his well documented story*, was indeed one of the determining factors, but by no means the most important. These (apart from Napoleon III's wish to leave his mark on Paris and give his régime an air of imperial grandeur) were slum clearance, the elimination of cholera and better traffic movement. Indeed Haussmann can be classed among those civic designers who are traffic engineers first of all, and to whom architecture is only the embellishment of the facades enclosing traffic arteries.

*

But we must grant him his extraordinary foresight; only since the last war have the streets he laid out before motor-cars were thought of begun to prove inadequate.

*

This is a book ASTRAGAL strongly recommends to any architect planning a summer visit to Paris, in spite of its excessive price. But don't be taken in by the publishers' claim in the blurb that the author shows "the influence of Napoleon and Haussmann on nineteenth and twentieth century city design." This is barely touched on in the concluding page and a half.

MONEY FOR OLD ROPE

If you have the eye of an eagle, the tenacity of a bull terrier, and if you are a student and want to go abroad and are not rolling in money, ASTRAGAL suggests that you look in your JOURNAL of May 22, page 772. Don't leave it too long though, for the sands are running out. . . .

ASTRAGAL

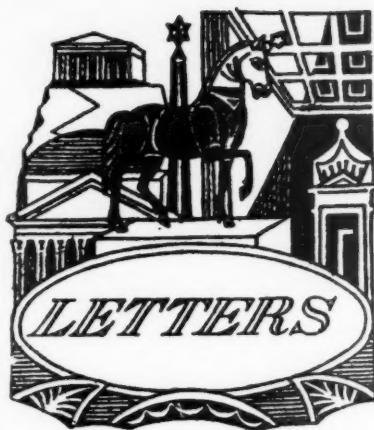
* *Napoleon III and the Rebuilding of Paris*. By David H. Pinkney. Oxford University Press (for Princeton University Press). Price 48s.

DIARY

Interview of Charles Eames, by David Pye, senior tutor in furniture design at the RCA; Bruce Archer, lecturer in engineering at the Central School of Arts and Crafts; and Basil Taylor, art critic on the BBC. Third Programme, 8.40-9.10. JUNE 10

Memorial Service for Grey Wornum. At St. James's, Piccadilly. 12 noon. JUNE 11
LMBA Brains Trust. Philip H. P. Bennett, F.R.I.B.A., A. V. Waddell, M.I.Struct.E., C. T. Every, F.R.I.C.S., Norman Wates, F.I.O.B. Chairman: Ian Leslie. At Derry & Toms Restaurant, Kensington High Street. 12.45 p.m. JUNE 11

Christ and the Building Industry. Architects' Christian Union meeting at the RIBA, 66, Portland Place, W.1. 7 p.m. JUNE 12



A County Planning Officer

Ian M. Leslie, Editor "The Builder"

John Bickerdike, A./A.R.I.B.A.
and *Derek Phillips*

Malcolm Andrews, Alan
Emmerson, *Julian Keable* and
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A. W. Bransden, *R. A. Barber*,
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Edward H. Hartry, A.R.I.B.A.

Prunella Hodgson, RIBA Library

An Objectionable Practice

SIR.—The fact that the design of small houses and bungalows is largely passing out of the hands of qualified architects is a matter for great concern. An even more serious aspect of this problem is the extent to which this work is being carried out by unqualified persons employed in the offices of local authorities.

It is not an uncommon occurrence for detailed plans to be submitted for planning approval which are either not signed at all or are signed by the building owner. These plans are often of a very poor standard of design and when negotiations are entered into with a view to seeking improvements it may be found that the person responsible is employed by the local district council, sometimes in a quite senior capacity.

This practice is objectionable for a number of reasons. Firstly, such persons, though they may have a knowledge of building construction, are not likely to have much appreciation of the difference between good and bad design.

Secondly, it does not seem desirable that any person whose duty it is to advise a council on the merits of a plan, or to administer the council's by-laws, should have any other interest in the project beyond his official duties. If he has, it is difficult to feel sure that his judgment will always be impartial.

Thirdly, it is all too easy for such officials, by reason of their contact with the public, to solicit work. The building owner may

well feel that his plans are more likely to be approved if prepared by someone "in the know" and he is probably too easily persuaded that he is putting himself in the hands of a person fully qualified to carry out the work and in his ignorance may even be led to believe that he is employing an architect.

Fourthly, such persons are not bound by any code of professional conduct. By virtue of their other employment they can afford to undercut the professional architect and thereby capture work which is not theirs by right.

Surely it is time all local authorities examined the position so far as their employees are concerned. If the elected members are not prepared to suppress this practice, let them at least bring it into the open by insisting that every plan prepared by members of their staffs is signed by the person concerned; the misguided building owner would then at least know that his house was being designed by a building inspector and not an architect, and the local planning authority would be aware with whom it was dealing.

I have no reason to think the practice of which I complain is any more prevalent in the county in which I have the honour to serve, than in any other. For this reason it would be unfair to identify this letter with a particular county and I must, with considerable reluctance, conceal my identity.

A COUNTY PLANNING OFFICER.

Brussels and Criticism

SIR.—Rather late in the day, I fear, my attention has been drawn to ASTRAGAL's comment (your issue of May 22) on the note in *The Builder* in which J. M. Richards's broadcast on the national pavilions at the Brussels International Exhibition was criticized for its lack of objectivity. Has ASTRAGAL missed the point? The broadcast was criticized not, as he suggests, because it was adverse to the British contribution, but because Mr. Richards took the (to my mind) mistaken viewpoint of regarding the pavilions as though they were entries in an international architectural competition.

Implicit in this viewpoint is a separation of design and function, of structure and theme—something which is commonly done in discussing street architecture but which, I submit, is not permissible in commenting on exhibition pavilion design.

This theme needs no elaboration here; it was well explained by Mr. James Gardner in his reply to Mr. Richards's comments on the design of the UK Pavilions in your own paper. But it necessarily follows that the purpose of a national pavilion at an International Exhibition such as at Brussels is not merely to evoke admiration for its exterior from a few possibly precious architects, but to persuade continental and foreign visitors with limited time at their disposal and an embarrassing choice of 43 national pavilions to see to go inside and, as a consequence, to follow and understand the theme. That over 10 per cent. of all who have paid for admission at Brussels have visited the UK Pavilion (and this in spite of a total absence of ASTRAGAL's dancing girls) seems to show that architects and designer have done a good job and that the theme and the buildings which house it have rung a bell with the continental press and visitor, however tinny it may have sounded to Mr. Richards.

It was this refusal to acknowledge facts, added to the unrealistic habit of so many architectural critics of talking about architecture on the air as though it were a three-dimensional exercise in cardboard construction quite divorced from purpose that evoked wonderment as to what exactly is the BBC's policy in regard to architectural criticism. And, as ASTRAGAL seems unable to throw any light on the matter, may I

repeat the hope that Sir Ian Jacobs will tell us? Many architects, I believe, would like to know.

IAN M. LESLIE.

London.
[ASTRAGAL replies: Mr. Leslie should perhaps note that Mr. Richards's broadcast was sub-titled "An Architectural Commentary on the Pavilions at Brussels" and he was not concerned with the popularity of their contents. It does not seem to the JOURNAL that the fact that 10 per cent. of visitors enter the British Pavilion in any way invalidates Mr. Richards's criticism of it or raises any questions about BBC policy.]

Designs Of The Year

SIR.—We were interested in John and Sylvia Reid's review of the COID's "Designs of the Year," and agree with much of what was written.

One point interested us particularly, referring to the pendant light fitting from the AEI Satina range of glassware designed by Nigel Chapman, disparaged as being "derivative." By this we are assuming the authors mean derivation from the early Scandinavian models, and we are sure that Chapman would be the first to acknowledge this influence.

We enclose two photographs which may illustrate this line of development for your readers: the first a fitting employing Scandinavian glass imported by Fredk. Thomas, the second a fitting by Forrest Modern.

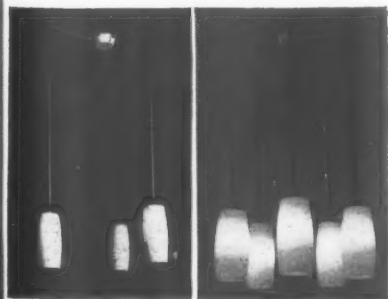
The line of development is perfectly clear, and we would ask the Reids whether in their view influence of this kind is fundamentally wrong, or whether their quarrel is with the COID for acknowledging it?

JOHN BICKERDIKE
DEREK PHILLIPS.

London.

John Reid replies: Whilst we entirely agree with Mr. Phillips and Mr. Bickerdike, it would take more than the two photographs they have chosen to make the line of development "perfectly clear," and it would be necessary to do more than look at the outward appearance of fittings. The mechanics of suspension systems and materials other than the glassware must also be considered.

Throughout history development has been by influence, could it be otherwise? The question that must surely be asked about every Design of the Year is: "Does it make an outstanding contribution to this development?"



Left, fitting imported by Fredk. Thomas; right, fitting by Forrest Modern, designed by John and Sylvia Reid.

Aesthetic Control

SIR.—Robert Jordan's letter (AJ, April 17) sums up the position admirably. Our original letter was rather weak, as we were legally advised to delete certain sections.

What is now required is that all those concerned should try to act in unison. Obviously something must be done in the RIBA, pressure should be brought upon the legislators, and letters should be written in the lay press. Meetings can and should be called, and committees formed. What is really needed, however, is an appeal to the jaded imaginations—an architects' Aldermaston. As a first step we have written the enclosed letter to the RIBA. A better suggestion would be welcome.

MALCOLM ANDREWS,
ALAN EMMERSON,
JULIAN KEABLE,
HARLEY SHERLOCK,
A/A.R.I.B.A.

London.

This is the letter referred to:

We wish to draw your attention to the apparently anomalous working of the Town and Country Planning Act as it affects our profession. The situation can and does arise in which members of the Institute, acting as Town Planning officers, would seem to contravene Article 1 of the professional code in that they "assume or consciously accept a position in which their interest is in conflict with their professional duty." In other words, the Act can place them in a position where, if they support their employers, the Planning authority, they may be acting against the interest of other architects.

This situation arises mainly over "elevational control" where the lay council rely almost entirely on their Town Planning officer for guidance. If he advises against another architect's scheme, he is obviously prejudicing that architect's interests. It is our contention that this can be avoided only if members of the Institute who are Town Planning officers, support fellow members' projects in all disputes on aesthetics in order to avoid contravening the professional code, and if the Institute makes this plain without delay.

We feel also that the Institute should campaign immediately for the abolition of "elevational control" which will no doubt continue to cause frustration in the profession, even if Town Planning officers who are members of the Institute are obliged to act in the profession's interest.

An RIBA Salary

SIR.—I enclose a cutting* from the *Daily Telegraph* which may interest you!

It is a sad commentary on the present status of our profession when the RIBA itself offers a salary range to a financial assistant which experienced salaried architects can rarely hope to command. You will see that the RIBA apparently rate an Assistant Secretary (Finance) much more highly than the Sheffield Regional Hospital Board rate a Principal Assistant Architect! This in spite of the fact that the architect will probably bear considerable responsibility for design and execution of contracts whose value will exceed by far the paltry £150,000 or thereabouts per year which the RIBA finds, for some inexplicable reason, so difficult to control.

The whole question of RIBA financial management is growing out of proportion to the problem involved. There is nothing so complicated about RIBA finance that cannot be handled by a man of average intelligence and with a general knowledge of basic accounting principles. The task should be well within the means of the Institute's Secretary and the members of the House and Finance Committee as far as policy is concerned. If the latter haven't got the time or the elementary knowledge

* The cutting shows advertisements by the Sheffield Regional Hospital Board for a Principal Assistant Architect with wide experience in a senior capacity to be responsible for all hospital building schemes in his area (salary £1,150 to £1,350) and by the RIBA for an assistant secretary (Finance) starting salary scale £1,250—£2,000.

to cope with the Institute's financial problems then they should not be where they are. There may well be need for a full-time accountant to assist the Secretary in keeping the books straight, but a salary level approaching that of a company accountant is ridiculous and completely out of scale.

One comforting thought is that if the salary attracts the kind of man it should do—with experience in organization and method—then he should work himself out of a job in less than a year!

PETER H. M. STEVENS.

St. Albans.

Why No Statement?

SIR.—At the Annual General Meeting of the RIBA it was strongly felt that the public relations organization should be overhauled. A recent personal experience has shown how hopelessly inadequate it is.

The Lord Mayor of London, making a speech at a luncheon given by the London Master Builders' Association, was reported by a national newspaper as saying, "I wish I had as much confidence in the skill of British architects as I have in British builders."

As this appeared to be a direct attack on the profession I phoned the RIBA to ask what action was contemplated. I was told that the Public Relations Officer was away ill and that no one else could deal with the matter. The next day I spoke to the PRO who informed me that it was really too late to do anything and in any case it was not considered advisable for the RIBA as such to reply, but it would be better if an individual did so.

Other professional bodies are quick to defend their members—how long must we wait before architects receive the same protection?

DENYS B. COOMBE.

Farnham.

Architectural Education

SIR.—We have followed with much interest the various articles, etc., in your JOURNAL dealing with the above subject and note with satisfaction that the tendency is moving towards full-time education. We, however, are a group of external students working in offices, who started as junior assistants attending part-time courses, and have through experience worked our way towards more senior positions.

We have formed a study group principally for design discussions and still endeavour to attend the part-time facilities available, all to make up for the deficiency in architectural education existing in the case of the "office men." The RIBA change in the syllabus for external students due to come into force in 1962 for Final Examination candidates has been regarded as a step in the right direction.

In our small group we endeavour to obtain advice and criticism on the Final Testimonies from those qualified architects seriously interested in architectural education. We find, however, that the standard of design and presentation of successful testimonies varies considerably.

In a recent problem we compared an unsuccessful submission of one of our group with that of a successful one submitted by a student from outside our group. It was the general opinion of some outside architects and ourselves that the standard was considerably lower than that of the one that failed.

We have noticed this inconsistency in the assessing of the RIBA Testimonies a number of times in the past couple of years and find it very disturbing when a subject has been passed which was considered to be of a lower standard by those in a better position to judge than ourselves. All this brings to mind as to how is the standard of design and presentation arrived at? Is the standard

set by those testimonies submitted at each submission date? If so, the chances of getting a testimony approved are 30 per cent. skill and 70 per cent. luck.

Dublin.

A DUBLIN GROUP.

SIR,—We thank Eric Heaf for expressing (AJ, May 8) his criticisms on architectural education, as in current practice. The problems of a potential architect are increased with the Royal Institute's insistence that all candidates, before being accepted as probationers, must be in possession of five subjects of the GCE.

We heartily endorse Mr. Heaf's views that these qualifications are not designed for the selection of future architects. Many a person keen in following the profession have been turned away from the "Gate of Architecture" by virtue of the fact that they do not possess these qualifications. It would appear that one's keenness and proved ability in an architect's office are not considered of prime importance by the Institute. Mr. Heaf hits the nail on the head when he says, "Let the student prove his value at the drawing board, in discussion and on the site." Surely the competent architect is the product of years of practical experience, fundamentals only being taught at the schools.

A. W. BRANDSEN,
R. A. BARBER,
E. E. LEMON.

Hemel Hempstead.

Design Pays

SIR,—I fully realize that it must be nearly impossible to get all the names right in the type of discussion reported (AJ, May 15). Just for the record, I would like to point out that I am the man who spoke against (among other things) Mr. Grenfell Baines' book of standard details for the builder, and my name is not "Hunt" as reported.

EDWARD H. HARTRY.

Teddington.

Architectural Records

SIR,—I hope I may be permitted to correct an ambiguity in Mr. Jenkins's letter in your issue of May 8, in which he refers to the decision of the Society of Architectural Historians to form a drawings collection in connection with their proposed Index of buildings carried out between 1860 and 1939. My first reaction on reading this was concern that yet another repository of architectural records should be started. I am informed, however, that the Society has no intention of rivalling the RIBA collection of original drawings, in which the work of Victorian and Edwardian architects is particularly well represented (a fact of possible interest incidentally to the newly formed Victorian Society). The aim of the Society of Architectural Historians, and I have Mr. Jenkins's confirmation on this point, is to make a collection of measured drawings or photostats of measured drawings of a period which as yet lies outside the interest of most preservationists.

Since this matter touches on the question of overlapping labour, I would like to mention that it is the policy of the RIBA Library to make its drawings collection as comprehensive as possible, and to leave the photographic documentation of English buildings to the National Buildings Record.

PRUNELLA HODGSON.

London.



MOW

Volume of Building Work

A new series of tables is to be published, showing the total value of both the building work ordered and work completed in each quarter. They are compiled from returns made by contractors and will be published every quarter in "Economic Trends"—a monthly report published by Her Majesty's Stationery Office at 3s.

We print the first of these tables below—showing figures for 1956 and 1957. An article accompanying the tables points out that since the industry employs some two million men, which is 9 per cent. of the "civilian labour force," the figures are of some significance. They do not include maintenance work—which is about one-third of the total of new work. Because of the time lag between the letting of contracts to main contractors and letting by them in turn to sub-contractors, only the former send in returns for new orders, whereas both send in returns for work completed. The article also points out that substantial fluctuations in future figures are

to be expected because of large contracts such as the £20 million motorway from Watford to Dunchurch.

TENDERING

Draft form of Invitation

The Federation of Associations of Specialists and Sub-contractors have issued the following statement:

"In November, 1955, the Federation of Associations of Specialists and Sub-Contractors proposed to the Joint Consultative Committee of Architects, Quantity Surveyors and Builders that, in the interests of standardization, Forms of Invitation to Tender should be published under appropriate sponsorship. This proposal was agreed to in principle.

"Although it had been contemplated that drafts should be prepared by the JCC, early in 1957, to avoid further delay, FASS decided itself to prepare the accompanying draft of an Invitation to Tender appropriate to Specialists and Sub-Contractors. This was forwarded to the Joint Consultative Committee in December, 1957. Copies were also sent for information to Local Authorities' Associations, the London County Council, and to the Metropolitan Boroughs Joint Standing Committee.

"The advantages of such standardized Forms will be apparent to all interested parties. They would represent a further step in the standardization of contractual procedure."

In answer to editorial enquiry, the JCC state that "... this draft form is still being considered. ..."

Clauses in the draft cover the following matters:

That the time during which the tender remains open for acceptance is limited; that the sub-contractor is to see the form of main contract; that the standard form of sub-contract shall be that "approved by the NFBTE and FASS"; that the sub-contractor will start work when ordered, provided he has all the drawings, approval of setting out and calculations. Attached to the form is an appendix of information which must be supplied to the sub-contractor.

Building and civil engineering: New work

Great Britain
(i) Value of new orders obtained by contractors
Annual and quarterly totals

Annual and quarterly totals											£ million
	Total	New housing			Other new work						Work not covered by orders (')
		Total	For public authorities	For private developers	Total	For public authorities	For private developers				
							Total	Industrial	Miscellaneous		
1957	1,338	529	253	276	809	396	413	215	198	157	
1956 4th quarter	360	154	75	79	206	103	103	54	49	55	
1957 1st quarter	368	160	77	83	208	101	107	58	49	54	
2nd quarter	330	130	58	72	200	92	108	55	53	38	
3rd quarter	341	125	67	58	216	117	99	51	48	29	
4th quarter	299	114	51	63	185	86	99	51	48	36	

(*) These figures relate to work included in the preceding columns which is to be done without a firm order.

Source: Ministry of Works

(ii) Value of new work done by contractors
Annual and quarterly totals

	Total	New housing			Other new work				
		Total	For public authorities	For private developers	Total	For public authorities	For private developers		
							Total	Industrial	Miscellaneous
1956	1,335	568	325	243	767	337	430	271	159
1957	1,387	553	306	247	834	376	458	275	183
1956 4th quarter	345	144	82	62	201	87	114	71	43
1957 1st quarter	337	140	78	62	197	86	111	67	44
2nd quarter	355	144	81	63	211	95	116	71	45
3rd quarter	345	134	75	59	211	96	115	68	46
4th quarter	350	135	72	63	215	99	116	68	48

Source: Ministry of Works

for. This relates to periods of payment and maintenance, the amounts of retention, and the starting date of the sub contract. It includes a list of some 14 items of attendance aimed to define clearly the respective responsibilities of main and sub-contractor. The form seems a great improvement on the more customary brief letter written by the architect's junior assistant which brings forth the grovelling quotation with grey print "conditions on the back" only noticed by the main contractor when it is too late.

RIBA CONTRACT

Obligation To Insure

The Court of Appeal has ruled that a contractor is not obliged, under the RIBA form of contract, to insure the building owner against legal claims by property owners arising out of the subsidence or collapse of adjoining property. The Court allowed an appeal by Patman & Fotheringham Ltd., building contractors, London, from a judgment of Mr. Justice Gorman that they were in breach of a building contract with Joseph Gold, of Mill Hill, in failing to insure him against such claims. One consequence of this judgment would appear to be that architects should advise their clients to consider insuring against such claims.

Mr. Gold claimed that appellant defendants contracted with him to demolish his bomb-damaged property at 19, Buckingham Gate, London, S.W., and build a six-storey block of offices in its place. Mr. Gold's case was that damage had occurred to party walls on both sides of the property, but that defendants had failed either effectively to insure him against his liability or to indemnify him themselves. Defendants denied breach of contract and it was stated that the contractors had taken out a Lloyd's policy of insurance but that no payment had been made to the plaintiff who had incurred expenses of nearly £12,000 from the damage and anticipated further claims.

Giving the judgment of the court, Lord Justice Hodson said the question for determination depended on the construction of the contract between the parties which was drawn up on the RIBA form of contract.

Condition 14(a) provided: "The contractor shall be solely liable for and shall indemnify the employer . . . in respect of personal injury or the death of any person . . . arising out of . . . the execution of the work, unless . . . due to any act or neglect of the employer" and 14(b) provided: "Except for such loss or damage by fire . . . the contractor shall be liable for and indemnify the employer in respect of . . . any loss . . . to any property real or personal in so far as . . . such damage arises out of the negligent execution of the works . . . or the fault of the contractor."

Then came a condition which stated that without prejudice to his liability to indemnify the employer under condition 14, the contractor should effect, or cause sub-contractors to effect, insurance. Under condition 15, the contractor was required to insure against fire in the joint names of the employer and contractor. Condition 15 referred to the bills of quantities and contained in them were the words: "The contractor shall insure or make payments in connection with the following: 'insurance of adjoining properties against subsidence or collapse.'"

Subsidence on both sides of the owner's property appeared to have been caused by piling operations carried out on the owner's land by the defendants acting on his instructions or those of his architect.

Conditions 15 and 25 from the main contract were persuasive to suggest that the insurance specifically required by the bills of quantities would be found to be insurance effected by the contractor for himself

and not for the owner.

His lordship added the court found no sufficient reason for thinking that when one came to the last item "insurance of adjoining properties against subsidence or collapse," the obligation to insure was for the first time an obligation to insure not the contractor himself but the owner.

BILLS OF QUANTITY

Legal Construction

Giving judgment in the Queen's Bench Division in a dispute between Dudley Corporation and a firm of building contractors, which raised questions of construction of bills of quantity, Mr. Justice McNair commented that the Corporation put forward the documents in order that contractors might make their tender upon it. It seemed to his lordship that any ambiguity in the bills of quantity presented to the tenderer must be resolved in favour of the contractor and against the Corporation.

The dispute concerned the price to which the contractors, Parson & Morrin Ltd., of Belgrave Road, Edgbaston, Birmingham, were entitled for excavating rock in connection with a £70,797 contract for the building of a junior school at Buffery Road, Dudley. The work was completed in 1954. In September, 1956, the architects, Messrs. Webb & Gray, issued a final certificate for a sum of £3,294, which included £3,035 for excavating 750 cubic yards of rock at 2s. per yard and 1,480 cubic yards at £2 per yard.

There was no dispute over the 750 yards item but the Corporation contended that the price of 2s. per yard applied to all the other rock and the contractors were only entitled to £482. A case for the opinion of the High Court was stated by an arbitrator. Mr. Justice McNair, giving judgment in favour of the contractors, said that in his view an item in the documents "750 yards cube extra for excavating in rock including the use of compressors," for which a price of 2s. was given, related only to excavations in connection with the heating basement and was not of general application.

It was stated that the £3,294 awarded to the contractors by the arbitrator operates automatically following the court's decision. The contractors were also awarded costs.

IUA

Summer School

A summer school on the design of schools organized by the Portuguese Section of the IUA is to be held from September 1 to 27, 1958. The course is open to students in their final stage at architectural schools and graduates of no more than two years' standing. The lecturers and directors of studies include C. H. Aslin, County Architect, Hertfordshire, Professor Luigi Piccinato, Professor Alfred Roth, Senhor Victor Palla, Professor Guy Lagneau, Professor Robert Auzelle and Professor Gunther Wilhelm.

The number of students admitted to the course is limited to 50. A selection committee will decide on the applicants to be admitted to the course. Applications should be made before June 10, 1958. Applicants will be informed of the Selection Committee's decision before June 30. All correspondence and requests for information should be addressed to the IUA Summer School 1958, Escola Superior de Belas Artes, Oporto, Portugal. Booklets and application forms are obtainable from the Secretary, UK Committee, IUA, 66, Portland Place, W.1.



Nason's, the Canterbury furnishing store, have staged an exhibition of four "contemporary rooms" designed by third year students of the Canterbury College of Art School of Architecture. The students were given the task of designing the rooms for particular uses and users, and Nason's bought the furniture and furnishings they selected, and did the construction work to the students' plans. Students of graphic design did some first-rate caption boards. Above is the living area of a room designed by M. E. C. Luck for a young television star, and below is the drawing for its caption board.



Bedroom for a Starlet of television and films.

Although only 19 she has

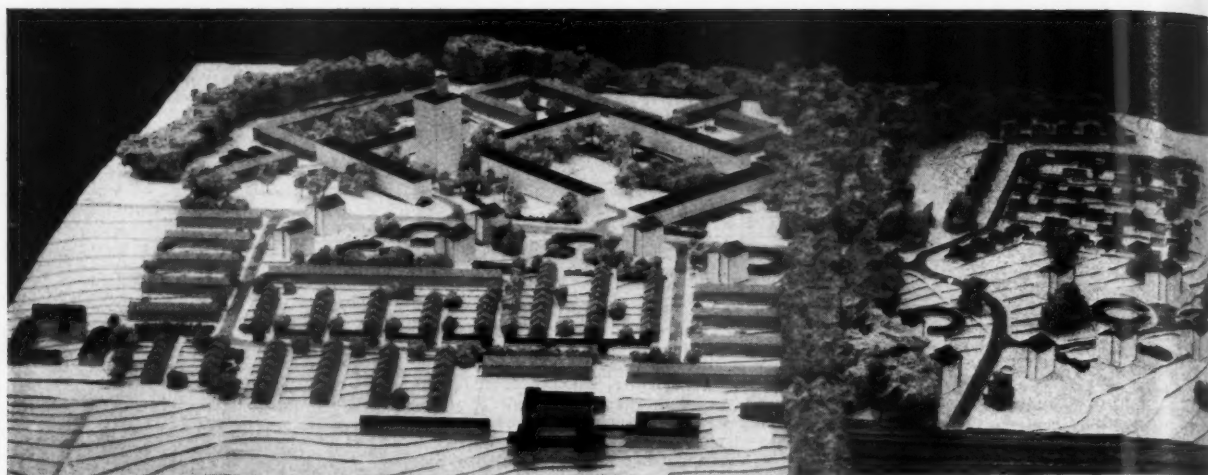
very decided views and tastes

as well as phenomenal statistics.

GREY WORNUM

A Memorial Service

A Memorial Service for the late Grey Wornum will be held on Wednesday, June 11, at noon in St. James's, Piccadilly. All his friends and fellow architects who wish to honour his memory are very welcome.



Model of the housing projected layout of the Kildrum and Park areas. The density of the Park area, on the right of the model, is 70 to the acre; that of Kildrum is 80.

CUMBERNAULD NEW TOWN

Preliminary Planning Proposals

The preliminary planning proposals for the new town of Cumbernauld were published last week, and are summarised on these pages. The proposals break new ground in the design of new towns: the site is relatively compact, neighbourhood planning is abandoned, major facilities are concentrated in the central area, and housing densities range from 70 to 120 persons per acre, and some industry will be located near housing areas. A fuller study of Cumbernauld will appear in a later issue. ASTRAGAL's comment is on page 853. The Chief Architect and Planning Officer is L. Hugh Wilson.

The new town of Cumbernauld is being built as a balanced community to assist in the relief of congestion in the City of Glasgow and out of the proposed total population of 50,000, some 40,000 will come from

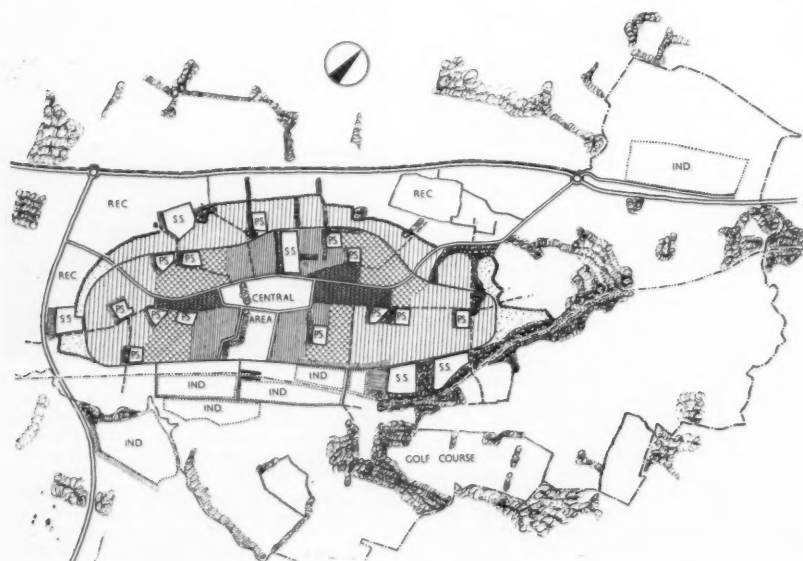
Glasgow. It occupies a strategic central position in the lowland industrial belt of Scotland, close to a coalfield, and served by main roads and railways.

The designated area of the new town

comprises some 4,150 acres and is roughly triangular in shape, measuring 5 miles from north east to south west, and two miles across from north west to south east at its widest point. The site is hilly and the major development of the town will be concentrated on a broad hogsback about 1 mile wide and 2½ miles long, running north east and south west. The altitude varies from about 260 ft. in the Glasgow road valley to about 480 ft. at the highest point on the hilltop. There are steep slopes on the north west side of the hill and longer and more gentle slopes on the south east. The form of this hilltop site, with clearly defined limits, has led to the general conception of the town as a compact urban centre, containing the 50,000 population, with surrounding recreation areas—the whole set against the background of open hilly country.

The road pattern within the new town will consist of an inner and an outer ring road, linked to the new lines of trunk roads A.73 and A.80 by three radial roads. The inner ring road will bound the central area, while the outer ring road will encircle the hill.

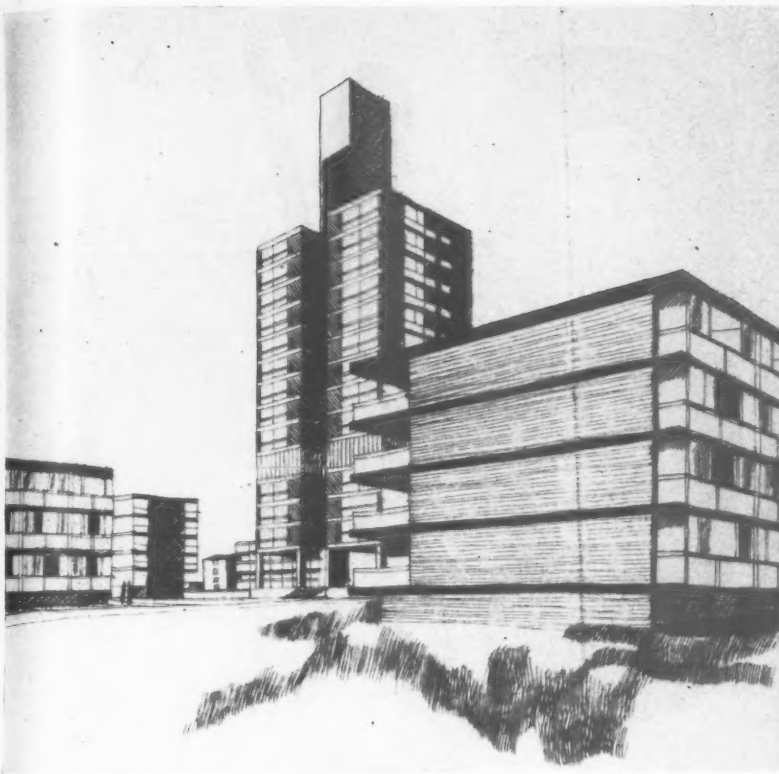
There will be a separate footpath system radiating from the centre with subsidiary links between areas and to the recreation grounds and open country beyond. None of the local development roads will provide through access between the main roads, so that the footpaths will be kept free of crossing traffic. The paths will cross the main roads by tunnels or bridges. The road pattern will provide a simple circulation for the 'bus services; all houses will be within 300 yards of a 'bus route and it will not be necessary for 'buses to enter the resi-



Left, plan of the new town.

[Scale: approx 1" = 1 mile]. The plan does not show contours: but the principal feature of the site is a hill, about 2½ miles long and a mile broad, on which the town is to be built, with steep slopes to the north west and more gentle slopes to the south east. The densities include for other uses such as shops, churches, community buildings etc. to be carefully integrated with housing.

KEY	
[Pattern]	50 p.p.a.
[Pattern]	70 p.p.a.
[Pattern]	85 p.p.a.
[Pattern]	100 p.p.a.
[Pattern]	120 p.p.a.
PS	Primary schools
SS	Secondary schools
IND	Industry
REC	Recreation grounds
[Pattern]	New major planting



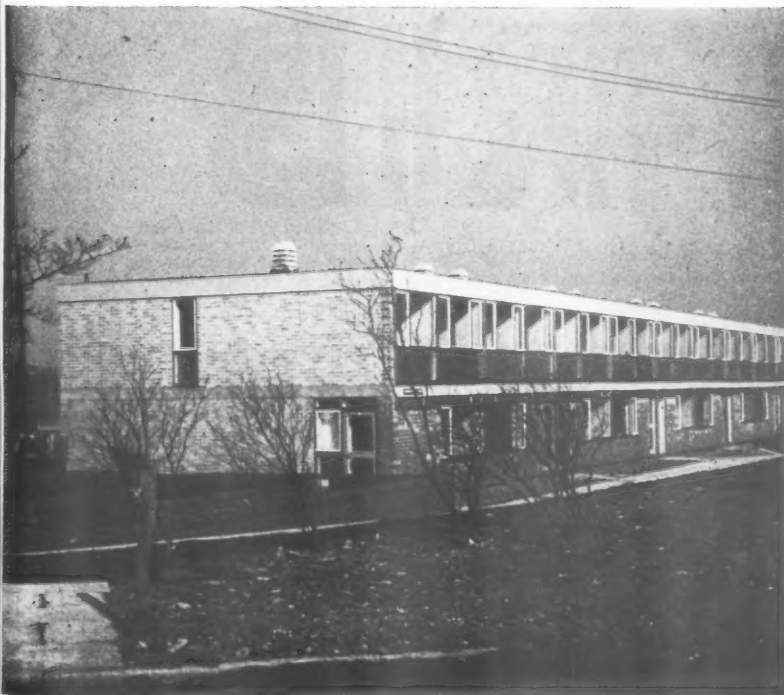
Above: perspective of the first projected development at Kildrum.

dential areas. New passenger and goods stations will be built close to and easily accessible from the central area.

The central area of the town will provide sites for shops, restaurants, offices and public buildings such as cinemas, halls, library, civic centre, etc. and will also con-

tain some housing in high blocks of flats. The site chosen is roughly in the middle of the built-up area of the town, south of and just below the ridge of the hill. From this position there will be fine views in all directions. The maximum distance from any house to this shopping centre will be $\frac{1}{4}$ mile

Below, this terrace is the first housing to be completed in the new town.



and over two thirds of the houses will be within 600 yards of the main shops. Plans are now being worked out for this area which will be contained within the inner ring road and provided with ample car parking space, some of it possibly at a lower level. Between the shops there will be pedestrian circulation only, linked to the main footpath system of the town. There will be shelter from wind and rain. It is proposed that the local shopping needs should be met by the provision of "corner shops" throughout the residential areas. These shops will be large and fully equipped to sell a wide variety of merchandise.

The first industrial development in the town has been the erection of a large factory by Messrs. Burroughs Adding Machine Ltd. It is hoped to build standard factories in units of 20,000 sq. ft. capable of subdivision, and also factory space from 300 sq. ft. up to 3,600 sq. ft. on one floor in blocks of three storeys for the small industrialist or the self-employed craftsman. It is intended that some multi-storey blocks and some smaller single-storey factories should be placed throughout the town in the vicinity of the housing areas.

The main development on the hilltop, in terms of quantity, will be housing and it is proposed that the pattern should be of gradually increasing densities towards the centre with a general minimum density of 70 persons per acre and a maximum of about 120 persons per acre. The form which the housing takes will vary considerably according to the position on the site, aspect, levels, etc. Particular attention will be paid to layout to ensure pleasant living conditions for the inhabitants of the town. With the higher densities a proportion of the housing will necessarily be in the form of flats and maisonettes generally in three to five storey blocks although there will be a number of high point blocks in the centre. The gentle southern slopes of the main hilltop are more suitable for two storey development than the broken steeper slopes on the north.

The character of the site determines that the development should be compact and it is proposed, therefore, that the method of planning a town whereby the housing is grouped in a series of neighbourhoods, each with its local centre, should not be adopted. Instead all the major facilities will be concentrated in the central area.

Secondary schools will be accessible from the outer ring road, and the primary schools from the footpath system. Playing fields attached to the schools will be kept to a minimum, and education playing fields will be provided in the recreation area. A well-wooded glen in the Cumberland House grounds is being reserved for a town park. Sites are being reserved for eight churches, and others can be made available.

Considerable attention is being paid to the problems of landscaping in the town, particularly with regard to tree planting to give shelter on the hilltop. Bold masses of trees will be used to contrast with the compact groups of buildings and there will also be planting of small groups of trees and shrubs within the housing areas. The Corporation are most anxious that there should be a high standard of design in the new town, not only in terms of buildings and spaces but also of all the many other smaller elements such as lamp standards, shelters, road signs and name boards, advertisements, etc.

From the surrounding valleys and from more distant points on the hills, the new town of Cumbernauld will comprise a foreground of playing fields and open spaces, a definite urban boundary above the steep slopes, the hillside, with the pattern of buildings and trees and spaces accentuating the form of the land and finally the skyline, building up to a climax with the high tower blocks of flats and offices in the central area.

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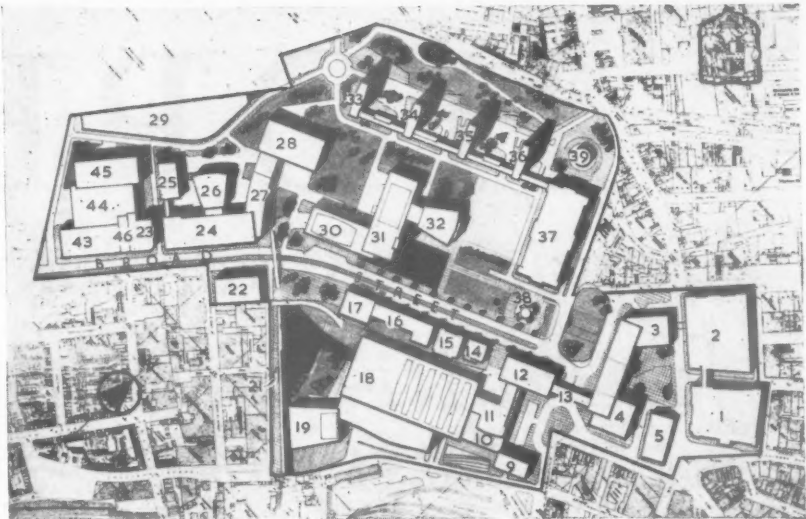
Plan for New Civic Centre

A new master plan for the civic centre area of Birmingham, prepared by A. G. Sheppard Fidler, the City Architect, has been approved by the General Purposes Committee of the City Council. The new plan replaces a scheme prepared in 1934, when Birmingham was a much smaller city. Since then radical changes have been made in the older part of the City, and are being made in the inner city by the Inner Ring Road scheme now under way. There has been a phenomenal increase in traffic, and in the City's needs for civic buildings.

Birmingham's main civic buildings (1, 2 and 5 on the plan) are at present grouped around Victoria Square and Chamberlain Place. But a large block of municipal offices by Cecil Howitt (37) was built in 1939 near the Hall of Memory, and was in fact the first section of the 1934 scheme, which comprised a monumental formal group of buildings in U shape with ornamental gardens in the centre. The Birmingham Municipal Bank (15) built in 1933, and the Masonic Hall (16) were also part of this scheme.

In a report on the master plan Mr. Sheppard Fidler says: "in the future, even more than in the past, ideas of civic design, architecture, the need for and function of buildings, will change. It is, therefore, considered that the prime requirement of a master plan for such an area is that it should be flexible and capable of considerable adjustment without destroying the basic idea and function of the plan. This plan, therefore, represents a basic design conception for the whole area and does not attempt to define building needs in detail. . . . The present proposals set forward an organic scheme which will take account of change, as far as this is possible, and allow for stage-by-stage development. It is especially desirable that, at this stage, there should be no attempt to "design" the buildings and give them in 1958, a definite architectural character. Buildings and their surroundings need to be free from the straitjacket which would be imposed by uniformity of planning and adherence to a preconceived architectural formula and should be allowed to express their individuality within a broad harmony of design. There must, of course, be a degree of dignity and monumentality in civic buildings but new techniques and new materials should be taken into account and make a contribution to a lively, exciting and dramatic civic area. It is hoped that a new architecture will reflect the expanding life and development in the City of Birmingham."

The area is bisected by Broad Street, which meets the Inner Ring Road at its eastern end. As diversion of these roads was considered inconceivable financially the site has been considered as three large precincts, one to the north of Broad Street (which is to have two carriageways) linked by a pedestrian bridge to one to the south, and one to the east of the Inner Ring Road, centred on a greatly enlarged Chamberlain Place where Hanson's Town Hall and the principal municipal buildings are situated. From the footbridge one looks north across downs to groups of skyscraper towers for corporation departments. The main element in the northern precinct is the City Hall group which would also include a Philharmonic Hall and Civic Theatre in a complex of which a water garden would be a special feature. A tall tower on the Broad Street axis emphasizes the importance of this group. To the south of Broad Street the linear development is continued, and a two-decker car park on the site of the present municipal car park is built underneath a projected Exhibition Building. When the present buildings (library, museum and art gallery) at the eastern end of Broad Street have been demolished, Chamberlain



KEY

- | | | | |
|------------------------------|-------------------------|------------------------|----------------------------|
| 1. Council House | 12. Library Block | 25. Unallocated | 38. Hall of Memory |
| 2. Council House Extension | 13. Bridge | 26. Lecture Hall | 39. Planetarium |
| 3. Art Gallery | 14. Masonic Hall | 27. Hall of Marriage | 40. Unallocated |
| 4. Museum Block | 15. Municipal Bank | 28. People's Hall | 41. Commercial Building |
| 5. Town Hall | 16. Unallocated | 29. Unallocated | 42. Office Block |
| 6. Commercial building | 17. Unallocated | 30. Civic Theatre | 43. Unallocated |
| 7. General Post Office | 18. Exhibition Hall | 31. City Hall | 44. Swimming Baths |
| 8. Commercial Building | 19. Small Hall | 32. Philharmonic Hall | 45. Multi Storey Car Park |
| 9. Commercial Building | 20. Commercial Building | 33. Office Block | 46. Public Health Building |
| 10. Shopping Arcade | 21. Canal Building | 34. Office Block | |
| 11. Exhibition Hall Entrance | 22. Commercial Building | 35. Office Block | |
| | 23. Bush House | 36. Office Block | |
| | 24. Midland Institute | 37. Civic Centre Block | |



Perspective of the proposed Birmingham Civic Centre showing, left, the People's Hall, centre, tall blocks for municipal offices, and right, the Civic Theatre.

Place, on which the Town Hall stands, will be enlarged by the construction of new Library, Museum and Art Gallery. This block will stop the view eastward along Broad Street, but a colonnade will permit interesting views in both directions. This group of buildings will be linked by bridge to the Exhibition Building. In general, the great unifying factor will be the landscape treatment and not a predetermined architectural "style." Of the 80 acres in the area, roads will occupy 17, buildings 25, and 38 will be open space for public enjoyment.

A correspondent writes:

Thanks to the war Birmingham never got very far with its grandiose pre-war scheme for a civic centre, which bore more resemblance to a Palace of Soviets than to a

rationally designed seat of municipal government. The outline master plan is very much more in keeping with the true needs of the city, departs radically from earlier more pompous ideas, and, incidentally, shows how sensible Birmingham was to appoint its first City Architect a few years ago.

The success of the scheme will depend on how well it is executed, and modern buildings now going up in Birmingham do not encourage great hopes. The Inner Ring Road, now under construction, is 20 years out-of-date as a piece of town planning and highway engineering, and has carved some ugly wounds in the city, which the new plan stitches up to some extent. One hopes the City Council will encourage some of the younger and better architects to participate in realizing the plan.

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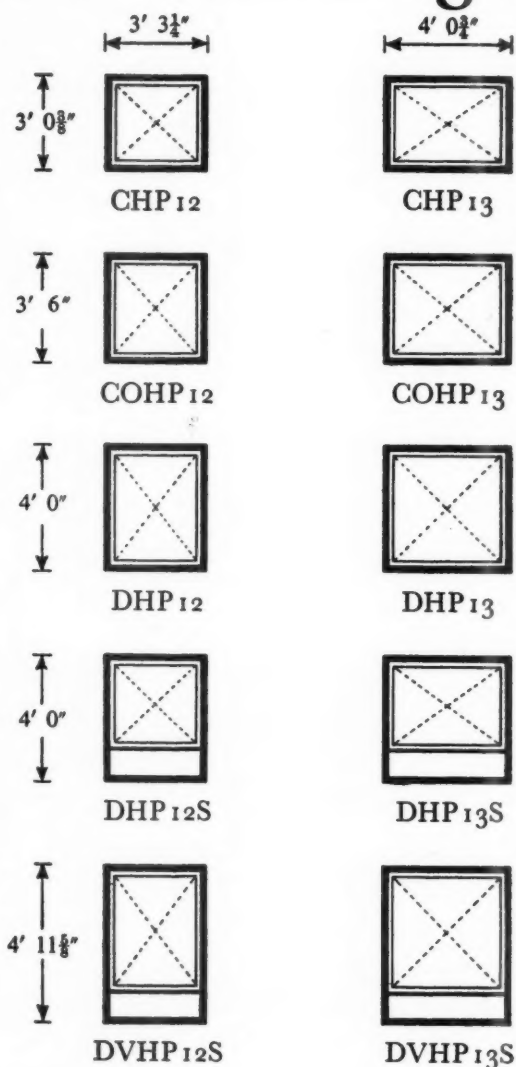
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TPI SPRING MEETING

Influence of Motor Cars on Towns

The main papers read at the spring meeting of the Town Planning Institute at Folkestone in May reflected the growing importance of the motor car in modern town planning. They were: Civic Design and the Shopping Centre, by L. Hugh Wilson (Chief Architect, Planning Officer, Cumbernauld), and The Problem of the Parked Car, by Wilfred Burns (Principal Planning Officer, Coventry). Our Specialist Editor, Planning, contributes the following report:

Mr. Wilson showed in his paper how the layout of a shopping centre, a major focus in almost all towns, has been completely transformed by the influence of the motor-car. The "shopping street" where pedestrians and vehicles jostled each other has given way to the segregated pedestrian precinct, with its attendant car parks and separate service roads. In spite of the continued opposition of the traditionalists these changes will have to be accepted. The paralyzing effects of traffic are so powerful that it seems doubtful if the older form can survive indefinitely. It certainly has no place in newly developed areas. So far as the designer is concerned the change is for the better. The basic forms of the new segregated precinct—the court or square and the promenade—possess enormous potential advantages through their intimate scale and great flexibility. The examples shown, which included the centres of some of the British New Towns, and continental examples at Stockholm and Rotterdam, demonstrated how much can be achieved when their effective use is combined with careful attention to detail.

In addition to its influence on the design of the smaller new centres in Britain and on the Continent, the motorcar has already given rise to completely new forms of development—the regional shopping centre and the redeveloped town centre. Both have reached their most advanced stages in the U.S.A., where the ratio of cars to people is one to three and where a shopping centre stands or falls according to its ability to cope with the parked car. A regional centre caters exclusively for car-owning shoppers and must have first-class access to the major highway network. The site is very carefully selected, usually on open land well outside the built-up area, and consists of a compact group of buildings—often totally enclosed and air-conditioned—surrounded by enormous parking areas. These carefully designed, brilliantly-lit islands in a sea of parked cars are now an established feature of the American scene. We can expect something of the kind in this country before very long. As architecture, the buildings themselves can be most impressive, but the all-important car-parks, empty or full, are so vast as to be inhuman and quite appalling.

The loss of so much valuable custom to the new regional centres has obliged several American cities to consider the wholesale re-shaping of their central areas. Some of these reconstructions, which aim at the segregation of shoppers from the traffic and include extensive car parks, are conceived on a very large scale. Victor Gruen's scheme for Fort Worth, Texas, for example, will transform the whole of the central area and provide space for 60,000 cars.

Mr. Wilson's audience—or at least the professional section of it—seemed quite prepared to accept the new trends in shopping centre design. Only one member doubted the validity of the basic idea and

suggested that segregation was "an ideal that should be pursued but never attained." He did not, however, attempt to substantiate his views.

Mr. Burns next discussed the general problem of the parked car in three main fields: at home, in the country and in cities. He believed that in future we must plan for 100 per cent. satisfaction of need in residential areas. This meant that in all new housing layouts space must be left for the eventual building of one garage for every dwelling. (It appears that in Hertfordshire this provision is already in force.) In the older residential areas where provision for car storage is poor, he thought conditions would get progressively worse. The only way out seemed to be to clear and lay out substantial areas specifically for this purpose. So far as the countryside was concerned he could only speak as a consumer, but it appeared to him that apart from specially attractive places which had severe problems of their own, hard standings off the highway should be sufficient to cope with the main problem—weekend visitors from nearby towns.

His chief concern was with parking in the city centre and on this he had two main points. Firstly, a positive plan for the car in the city must consider parking in relation to the general road problem in the city as a whole, and have the segregation of shoppers and stationary vehicles from moving traffic as one of its essential aims. Secondly, to be realistic, planned parking must be directed towards specific, limited objectives. It was not possible, he thought, still less was it economically feasible to cater in full for the peak parking load on high value land in the central area. On the other hand it was possible—and indeed essential—to cater for the average load. In most towns outside London this average load consisted very largely of cars making short stops of up to two hours. In Coventry the figure was over 80 per cent.

He concluded therefore that to cut down the level of parked cars to manageable size some system of regulation was needed. He favoured a system of graded charges deliberately designed to favour the short-stay visitor and discourage long stops. All-day parking by people working in the central area was a luxury that we could not afford, particularly if, as he believed should be the case, the local authority was to provide the car parks.

In the subsequent discussion the delegates were clearly disturbed by the unpleasant prospect of yet another tax on the motorist but were unable to disprove Mr. Burns' thesis.

On the following day after a tour of the surrounding district of Kent, during which appropriately enough we saw an example of another new building type which has been evolved to serve the motorcar—Louis Erdi's "Motel" near Hythe—the meeting ended with a symposium on the restoration of land worked for minerals. In this the Planning Officers of Hertfordshire, Northamptonshire

and Lancashire discussed their restoration problems and the methods they used. Each county has its own distinct problems. In Hertfordshire it is sand and gravel workings, in Northamptonshire the "hill-and-dale" left over from the ironstone mining; in Lancashire spoil and slag heaps and subsidence flashes. In every case some progress had been made, but restoration is expensive and so far has only taken place on a limited scale. Finance, in fact, is the key factor in the whole process, and apart from special arrangements like the levy of 3d. per ton on current workings in Northampton, it looks as if less rather than more money will be available for this useful and important work when the new system of block grants comes into force.

It is to be hoped, however, that this brief respite did not distract the delegates too much from the major theme of the meeting, for motor vehicles and all that they involve are one of the principal problems that planners will have to face in future. The car-to-person ratio in this country is already 1 to 13 and rising rapidly. In his opening remarks Mr. Burns suggested that in this country we have now reached the stage when control of the use of the motorcar should be recognised as essential if we are to preserve a healthy urban environment. Are planners, and the public they serve, prepared to act on this? The chaos and waste that already exists in some American cities is a warning of what may happen if they do not.

MOW

Fixed Price Tendering

Hugh Molson, the Minister of Works, spoke on building costs at the annual dinner of the Civil Engineer Contractors. He said that since the end of the war civil engineering and building had been busy to a point where there was a desperate shortage both of materials and of labour. Inevitably the cost of both rose, and it was not to the permanent disadvantage of those industries that the burden upon them should be reduced to a reasonable level. The index number of the cost of new building and civil engineering work which was 100 in 1949 rose steadily from 122 at the end of 1953 to 141 at the end of 1957. By the first quarter of 1958 it had actually fallen by one point to 140 and there was a similar reduction in the index on materials prices. As regards labour, the 30,000 who were absorbed into the industry in 1956 had left together with about another 10,000. But the labour force was still no less than in 1954.

He believed that the policy of firm price tendering which the Government adopted in April last year had played an important part in this stabilization. It was now generally admitted the timing of this decision was just right. It came at a time when the number of orders was beginning to decline, and there had been keener competition in the prices quoted. It had been to the benefit of the industry as well as to the advantage of those who commission work. There had been a steady increase in the number of firm price contracts given by public authorities and in March, the latest month for which figures are available, just over half of all the houses included in contracts approved for local authorities were on a firm price basis.

Mr. Molson added, emphatically, that restriction would not be continued any longer than was necessary. The credit squeeze would not be kept on for sadistic reasons. It was essential that planning should continue so that when the time came for production to expand once more the building industry could contribute fully to the nation's progress.



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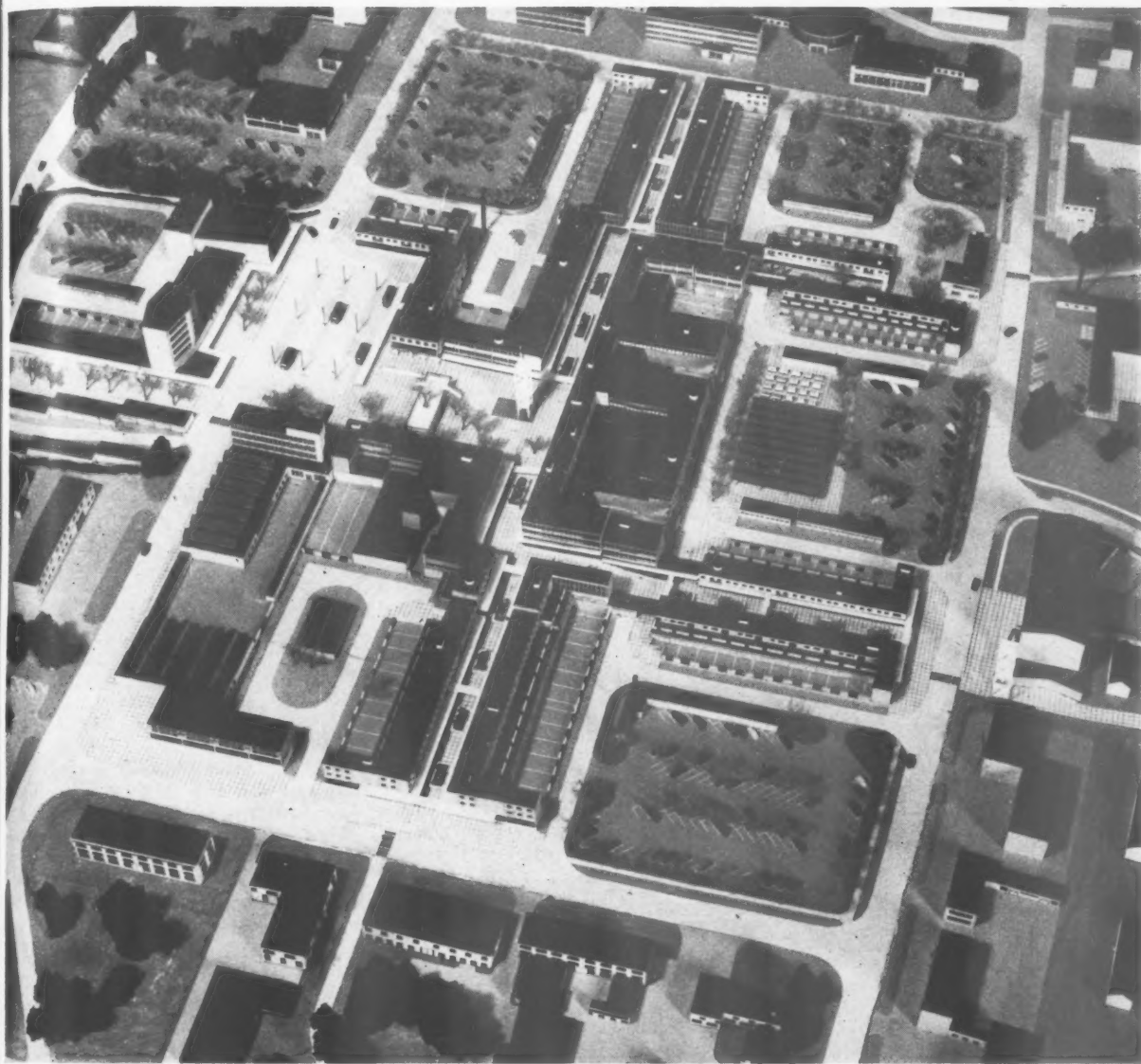
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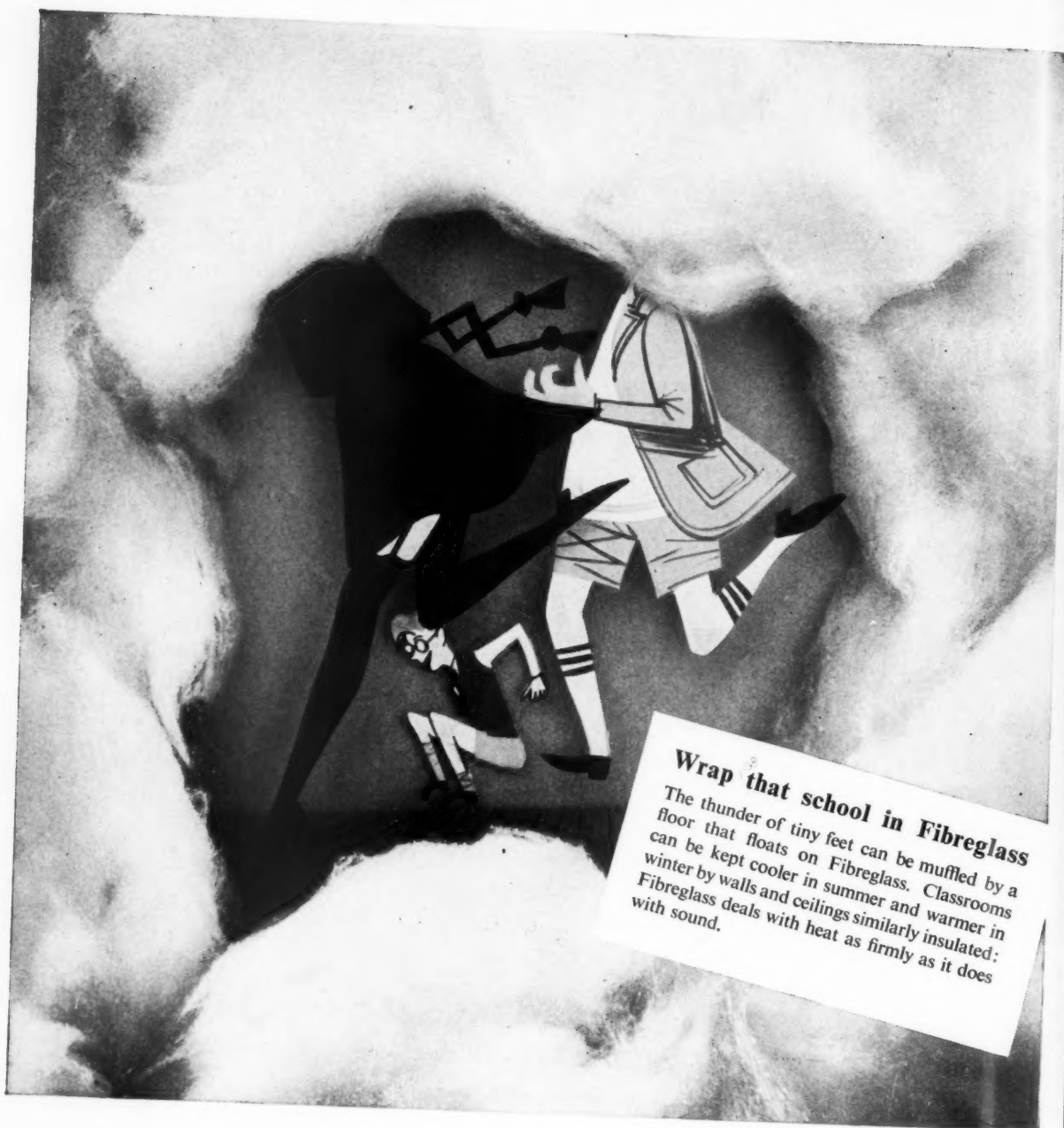
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BRITAIN'S FIRST PEDESTRIAN CENTRE



Stevenage will be the first town to have a completely pedestrian town centre, according to a statement made by L. G. Vincent, the New Town's chief architect, recently. The proposals for the centre are shown above. The area shown measures only about quarter of a mile by one third of a mile, but provides nearly two miles of pedestrian way (mainly covered), measured along the building frontages. In the first stage of the development, the central area, 120 shops are being constructed. The main section of the pedestrian way runs north and south, and consists of three-storey buildings only 40 ft. to 50 ft. apart. There will be shops on the ground floor, and the upper floors, when not required by the shop tenant, will be used for commercial and professional purposes. Elsewhere, the upper floors of three-storey blocks are maisonettes, and in the east-west pedestrian ways, the two-storey blocks have flats over the shops. By this means, together with a block of twelve-storey flats, it is intended to have accommodation for 300 families

in the centre, which, it is hoped, will prevent the centre becoming dead outside shopping hours. To the west of the main street lies the Town Square, with a free standing, 80-ft. high clock-tower, standing in an illuminated pool, and a central platform (caused by a fall in the ground) conceals lavatories and serves as a forum. To the west again is a bus and coach station. All the principal stores, multiple trading companies, banks and public utility undertakings are located round or near the Square. Around the central core are sites reserved for the future town hall, library, health centre, police, fire and ambulance stations, cinemas, office blocks and an hotel. Between these and the centre are parks for 3,000 cars. These parks, plus the siting of individual buildings in isolation around the perimeter of the centre, will provide the hardest task for Mr. Vincent's department if a disjointed, uncoordinated appearance is to be avoided. The first shops round the square are to open this month.



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THE INDUSTRY

Brian Grant describes a range of hanging tiles, a refrigerator, floor compounds and convector fire.

Tile hanging

The photograph on the right shows various new types of tile which have recently been introduced by Marley for vertical fixing. The left half of the illustration shows the smooth ribbed tile, which is produced in five pastel shades and has a smooth silicone processed surface which is claimed to stay clean for a very long time. The other half of the photograph shows arrowhead, scalloped, bullnose and beavertail patterns, the first and the last of these being new. There is also a stepped pattern, which, like the other four, is granule faced and produced in a range of standard colours. (*The Marley Tile Co. Ltd., Sevenoaks, Kent.*)

New small refrigerator

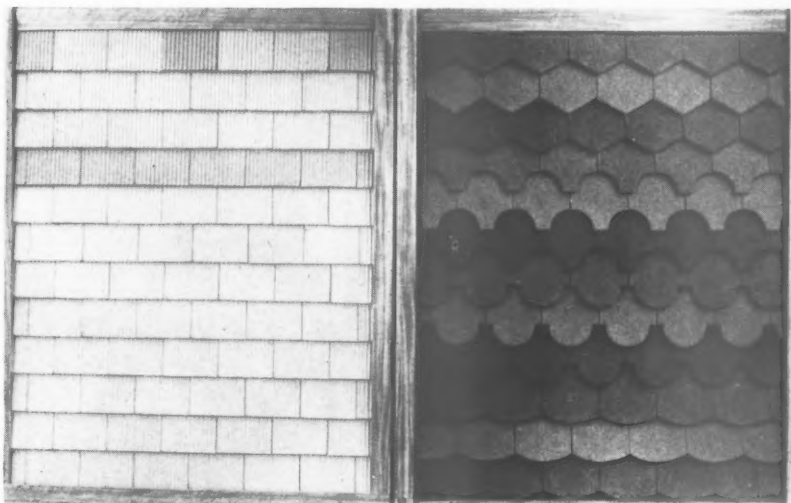
A new small refrigerator called the Packaway has just been added to the Prestcold range. It has a capacity of 3.1 cu. ft. and the price, in cream or white, is 66 guineas. The door is arranged to take bottles, eggs and various oddments, and can also be supplied to open right or left, or with the handle at the top for floor mounting, and at the bottom if the refrigerator is hung on the wall. Current consumption is about one unit per day and the overall dimensions are small, only 33½ in. high by 21 in. wide and 18½ in. deep. (*The Pressed Steel Co. Ltd., Oxford.*)

Floor treatments

A chart to show the appropriate use of various types of Bourne floor compounds has been prepared by the makers. Once the pointer is set to the type of floor, sundry cut outs show the most suitable treatment for the initial polishing and maintenance of lino, p.v.c., quarry tiles, wood, cork, rubber, concrete or granolithic floors. (*Floor Treatments Ltd., Wycombe House, Amersham Hill, High Wycombe, Bucks.*)

New convector fire

Hattersley Bros. have recently introduced a new type of convector fire known as the



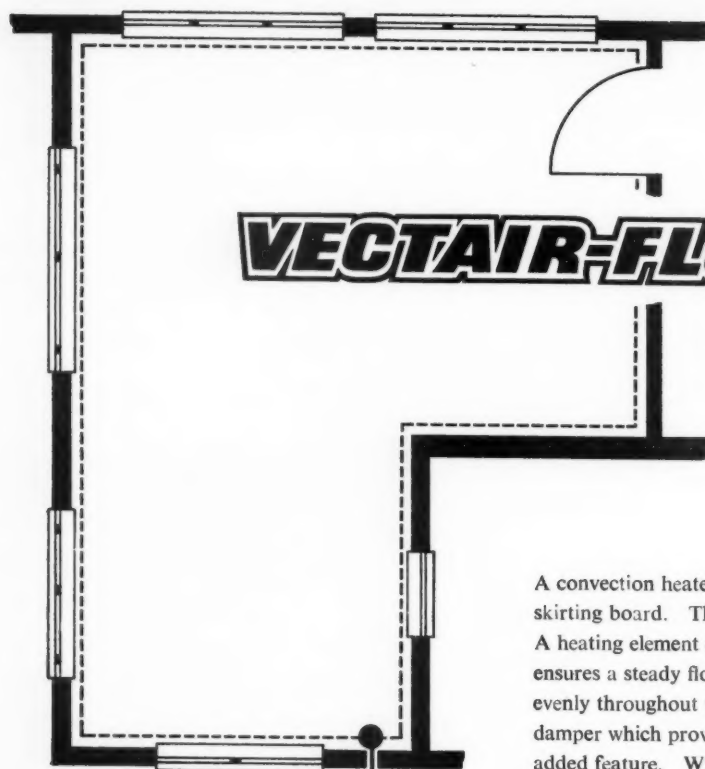
Some of the new Marley range of hanging tiles. Left, smooth ribbed tiles, right, top to bottom, arrowhead, scalloped, bullnose and beavertail patterns.

Merton. It is suitable for openings from 16 to 18 in. wide and 20 to 22 in. high, and is also available as a free-standing model. The back boiler will provide domestic hot water and heat a towel rail or radiator, and has an output varying between 3,000 and

10,000 B.T.U. per hour. The fire is fitted with an adjustable throat restrictor and will burn any type of solid fuel. A fire guard and gas lighting equipment are sold as extras. (*Hattersley Bros. Ltd., Queens Foundry, Swinton, Mexborough, Yorks.*)

Below left, the new Packaway, refrigerator by Prestcold. Below right, the Merton convector fire, by Hattersley Bros.

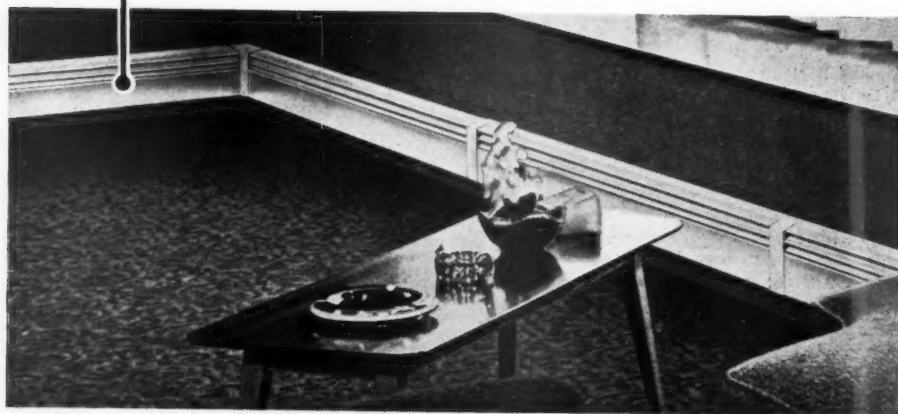




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technical section

INFORMATION
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A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.

22.88 sound insulation and acoustics
DOMESTIC SOUND INSULATION

Sound Insulation in Houses (Department of Health for Scotland, Technical Memorandum No. 3. HMSO 4s.)

This memorandum provides a painstaking and practical survey of the latest findings of the BRS on the design of party walls and floors of satisfactory sound insulation performance for housing. The fact that it expressly applies to Scottish practice does not materially reduce its usefulness to English architects.

The memorandum deals in turn with party walls, walls separating houses from common stairs or passages, concrete party floors, wood joist party floors, partitions, plumbing and ducts, and is illustrated by numerous working detail drawings. The details recommended for walls are conventional, but a warning is given that 11-in. cavity brick walls must not be expected to give better insulation than 9-in. solid ones, and indeed may not be quite as good unless the correct type of wire tie is used.

A strong recommendation is made to use concrete party floors in preference to wood joist ones wherever possible. This will not only provide good insulation but also ensures a better standard of fire resistance and may well simplify the construction especially where slender walls are used. This will be evident from the detail of a Grade I joist floor which is reproduced here.

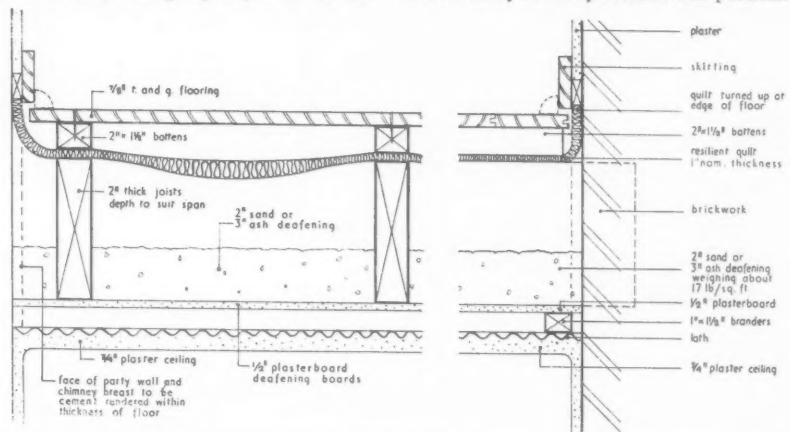
Good specification tips are given on the construction of floating floors both on concrete and joist structures, and it is observed that the practice of running the flooring battens parallel to, and midway between the joists is now deprecated. The preferred method, which adds an extra two and a half inches to the overall thickness of the floor with the battens lying along the top of the joists is shown. Although some insulation values between 45 and 27 dB for a half a dozen different types of internal partition are given, no recommendation is made as to what is regarded as a suitable minimum value. Constructions giving insulation of less than 30 dB are in the writer's view best avoided, at least for the division of bedrooms.

28.23 miscellaneous
SYSTEMS OF PROPORTION

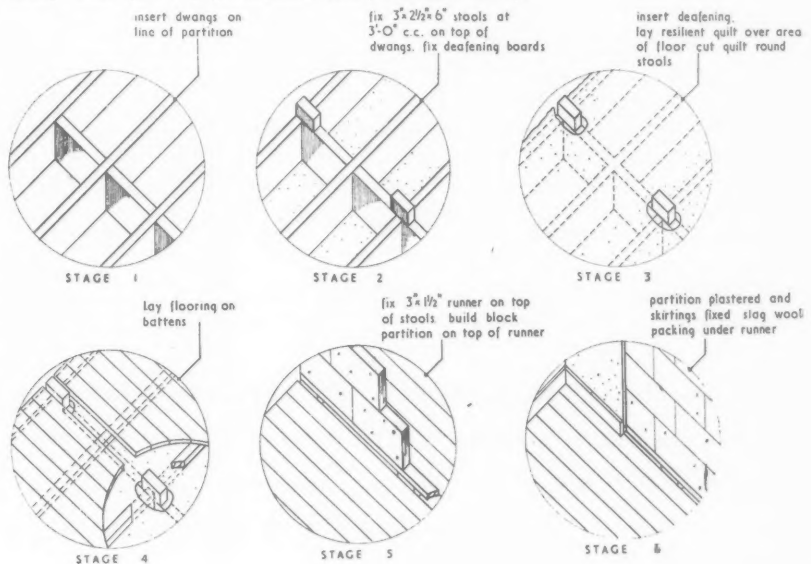
The Theory of Proportion in Architecture. P. H. Scholfield. (Cambridge University Press. 30s.)

This, we are strongly tempted to guess, is the most lucid book on this subject which has ever been written. Throughout it has the advantage that the author has a clear view of the practical needs of building and of designing; and has also a sensible vision of what proportioning, if properly understood, can do for architecture. It is, however, a work of scholarship, not a practical manual, and aims in its conclusions to encourage further studies and not to end them. Mr. Scholfield's view is that "the object of proportion is the creation of order apparent to the eye by the repetition of similar figures." Far from being discouraged by the great diversity of systems which have been tried out, or by the long periods of time which separate them and during which nothing was going on, he takes the

view that they complement one another and if properly understood form part of a single effort towards a single goal. He treats his subject historically, distinguishing as he does so the analytical systems, using arithmetic and which are commensurable, and the incommensurable systems, using geometrical ratios, and leading up to present day systems like those of Hambidge and Le Corbusier which use both approaches. His own contribution to the subject (apart, that is, from his clear exposition of it) lies in his proposal for elucidating Vitruvius. This proposal is of interest both on account of its intrinsic likelihood and also because it suggests that Vitruvius (and the ancient world which he represents) used a system which was more advanced than those current in the Renaissance or the Middle Ages, and which is akin in type to those which we are adumbrating for our own use today. This is a first-rate contribution to architectural thinking, can be understood (nearly all of it) by those who have not had a special mathematical training, and should be studied by as many architects as possible.



Above, details of recommended party floor construction in timber to give Grade I sound reduction. Note the addition of battens over the joists and the use of a double ceiling below, giving an added thickness of at least 2 1/2 in. Below, axonometric diagrams showing construction of a sound-resistant partition on a timber-joisted floor. (Note, a "dwang" is Scots for bridging, "deafening" Scots for sound insulation).



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10 DESIGN: BUILDING TYPES

warehousing 2

In the first article which appeared in this series (AJ, April 24) the author, A. B. Waters, described the mechanical equipment which has revolutionised storage methods in warehouses. Before carrying his main argument further, he considers, in this second article, the other contingent problems of warehousing: the accommodation to be provided for staff and vehicles, the subdivisions of the storage area, and the structural requirements which have to be met.

In the first article the requirements for the storage area of a warehouse were described. The additional accommodation depends on the manner in which the warehouse or depot is to be operated. In a building used solely for warehousing, provision for a few warehousemen and a supervisor may be all that is necessary. In a distribution depot a comparatively large staff is required if the depot is to operate independently of the firm's head office, and be responsible for receiving orders and invoicing goods to the customer. In many cases the practice is for the depot staff to be responsible for receiving and executing orders, but invoicing and collection of accounts is done at the head office.

Fig. 1. Assembly and loading area at the SPD Ltd. depot at Perry Bar, Birmingham. Note the raised Supervisor's office at the end, and the use of overhead doors. (This photograph was taken during the initial stocking-up period.) There are electric light fittings within the lantern lights, designed to illuminate the interiors of covered vans.



It is proposed to deal with transport, and its influence on planning, in a future article, so that reference to it in this article will be confined to principles only. The number of vehicles used in a distribution depot, where goods are received in bulk, and distributed in relatively small quantities, will obviously be greater than for a warehouse used purely for storage, in which goods are received and despatched in bulk. There will also be greater variety in the size of the vehicles. Apart from this, the policy of the firm in respect of ownership and maintenance of vehicles will affect planning. Some firms obtain their vehicles on contract, and all maintenance work is the responsibility of the contractor. Other firms own their own vehicles and carry out all maintenance work, including major overhauls and repairs to body work. Between these two extremes there is the medium course in which day-to-day maintenance on vehicles is carried out on the premises, but major overhauls and repairs are carried out by a commercial garage.

Ancillary accommodation

Ancillary accommodation will include some, or all, of the following:

General offices: The minimum requirement will be an office for a depot manager and one or two clerks. This will be increased with the amount of work to be carried out at the depot. In the case of a selling organization, it may be convenient to house the Area Sales Manager at the depot.

Supervisor's office: The warehouse supervisor, with or without assistants, must be able to supervise the flow of goods into and out of the warehouse, and his office should be sited to facilitate this control. Depending on its situation, it may be desirable to raise it a few feet above the warehouse level, but it should be remarked that there is no substitute for supervision from the floor of the warehouse.

Transport office: The duties of the transport officer will vary in different organizations, but will include the general maintenance of the fleet of vehicles, arranging the duties of the drivers, and route planning. In a distribution depot this last requirement is extremely important, since the vehicle routes must be planned so that all the shops at which the goods are to be delivered are dealt with in the correct sequence so that ground is not covered twice. This involves an intimate knowledge of the area, and for this reason the transport manager is frequently an ex-driver. The route the vehicle is to take determines the way in which a delivery vehicle is loaded, which must be done in such a manner that the load which has to come off first is put on to the vehicle last.

Warehouse

Pre-assembly area: To facilitate loading, an area of the warehouse adjacent to the despatch bay must be set aside, in which vehicle loads can be laid out in the correct sequence for loading into the vehicle. If it suits the planning, the pre-assembly area can be at a lower height than that of the area used for storage.



and a

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Corner tap mounting facilitates installation and maintenance.

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technical section

Security room(s): A separate lock-up store may be required for more expensive goods, particularly those which being small in size are more easily pilfered. Broken packets, from which some quantity of goods has been taken to fulfil an order less in size than the unit in which goods are packed at the factory, must be stored separately. Separate provision must also be made for goods which have been returned and must be kept at the depot before they are returned to the factory for a complaint to be investigated.

Cooperage: Accommodation is required for repacking cases damaged in transit, for the repair of cases, where returnable packages are used, and for the repair of pallets.

Empties: Containers for goods are divided into two categories, returnable and non-returnable. Non-returnable containers, e.g., fibreite cases, are disposed of by the retailer. Returnable containers have to be stored and returned to the factory for repair, cleaning and re-packing. The storage of returnable containers can sometimes constitute a sizeable problem. It is usually desirable to store empties in a section of the warehouse structurally separate from the main part of the building.

Delivery and despatch. This problem will be dealt with in detail in the next article. In most cases it is convenient to plan the warehouse so that incoming goods are received on one side of the warehouse and outgoing goods are despatched from the other side. This arrangement is particularly suitable when incoming goods are brought by rail (see Fig. 2). It can be used when goods are brought by road, but this requires a road both at the back and the front of the warehouse, which may prove too costly for a small depot, or inconvenient on a small site. In such cases delivery can be made at one end, but access into the warehouse must be at the back, to avoid cross circulation within the storage and pre-assembly areas. Delivery and despatch areas are preferably enclosed, and at least must be covered by a canopy so that loading and off-loading can be carried out in bad weather.

Welfare

Cloakrooms and sanitary accommodation: Sanitary accommodation must be provided at least to Factory Act requirements. The policy of the firm, and the size of the depot, will determine whether or not separate sanitary accommodation is to be provided for warehouse and office staff, and whether separate provision is to be made for the Manager. Since warehouse staff must be provided with protective clothing, lockers should be provided, and it is usually convenient to plan the locker rooms *en suite* with the sanitary accommodation.

Mess room: The staff of a warehouse is seldom sufficient numerically to justify the provision of a canteen serving full meals. Tea making is, however, a necessity, and a room must be provided for tea breaks, in which packed meals can also be eaten and where soup, pies, etc., can be heated. The number of staff will determine whether the employment of a full-time cook can be justified.

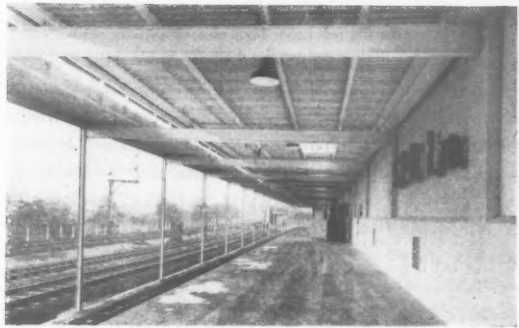


Fig. 2. (top). The rail loading bank at SPD Ltd. Fig. 3. (above). The mess room.

Transport

Garages: It is not always considered an economy to provide covered accommodation, as the cost of providing garages may be greater than the saving in depreciation of the vehicles. A canopy must be provided over the loading out doors, and this can be extended, and enclosed, to act as a garage. Where this does not give sufficient space a separate garage may be required. If vehicles are garaged in the despatch bay it must be separated from the warehouse by locked doors, so that a van returning late can be put away without leaving the whole of the warehouse open.

Petrol pumps: It is usual to provide petrol and/or diesel oil pumps, and lubricating oil; and facilities for pumping up tyres must also be available.

Vehicle maintenance: The accommodation to be provided will obviously depend upon the extent of the work to be done to the vehicles. The planning of such accommodation will follow the normal practice for commercial vehicles. It is usual to provide facilities to enable day-to-day maintenance to be carried out by the drivers. This will require a pit or a ramp, and a store for spare parts, and tyres. Vans are usually washed on the premises, and as this must be done at

technical section

night, to avoid taking the vehicle out of service, time can be saved if a washing machine is installed.

Pallet and fork truck maintenance: Industrial trucks are usually maintained, under contract, by the manufacturers. The batteries in electrically operated trucks must be charged overnight. In a large installation a separate truck-charging room is desirable, in which the trucks can be housed when not in use. Where only two or three trucks are employed the provision of a separate truck-charging room is unnecessary, and the truck-charging units are mounted on a wall in some convenient place that does not interfere with stacking.

Drivers' accommodation: It is usually considered desirable to make it unnecessary for drivers to go into the warehouse. For this reason a separate room for drivers may be required, which does double duty as a mess room for the drivers and as a place where they can do their "paper" work. On completion of a journey delivery dockets must be returned to the transport officer or the supervisor, and the appropriate office should be sited to enable this to be done.

Car parking and cycle storage: In common with other types of buildings, space must be provided for parking cars belonging to work people and visitors. Some provision for cycle storage is also normally required.

Services

The services required in a warehouse are usually simple since only space heating and lighting are required. Good lighting over the gangways and pre-assembly area is required, but a lower value can be accepted over the stacks themselves. Space heating is required for normal comfort conditions, but with some types of goods the heating must be reduced or even eliminated, when the problems of insulation are directed to keeping summer heat out instead of economizing in fuel in winter. In such cases ventilation becomes important. Natural ventilation is usually suffi-

cient, with adjustable inlets at low level and some form of closable extract ventilator in the roof. Extract ventilators should be placed as high as possible to prevent a heat build-up in the roof space. The pre-assembly area requires most consideration in the design of the heating scheme, since that is where most people are working. As they are often in front of open doors, radiant heating is to be preferred.

Structural requirements

A warehouse building has few special requirements. A single-storey building is more suitable for this purpose, since horizontal movement, with pallet and fork lift trucks, is obviously more rapid and more flexible than vertical movement with the restrictions imposed by lifts. It is sometimes convenient to place materials on a gallery or mezzanine floor, when the fork lift truck can be used if the storey height is suited to the "lift" of the fork truck. On a restricted site, or when an existing building must be adapted for warehousing, a multi-storied building may have to be used. In such cases it is probably best to transport goods between floors on a pallet truck and the lift(s) must then be capable of carrying the goods, a pallet truck and the truck operator.

Floor loading: It is easy to determine the dead load imposed on a floor by the material to be stored. Fork trucks are very heavy, a truck capable of carrying a load of one ton will weigh at least $1\frac{1}{2}$ tons and possibly 2 tons, so that the combined load can be as much as 3 tons. This is, however, spread over the area of the truck and is transferred to the floor by three or four wheels, and again the dead loading on the floor is not difficult to determine. The difficulty comes in assessing the dynamic loading due to starting, stopping and movement of the truck.

An investigation carried out by the Research Director of the Yale & Towne Manufacturing Co. has shown that it is possible to establish a factor of $1\frac{1}{2}:1$ due to the dynamic loading; and a factor of 2:1 for concentrated load conditions, making an overall factor of 3:1 for the stresses in the floor slab imposed by a truck in operation, over that which would obtain on a uniformly loaded floor slab. This increase in loading applies only to the trucking aisle, so that in a floor designed for 2 cwt. per sq. ft., with column spacings at 20 ft., and an aisle 10 ft. wide it is possible to use a loaded truck weighing approximately 15,000 lb., which means that in such conditions a load of approximately 2 tons could be carried safely, assuming that the truck weighs twice as much as the load it is capable of carrying.

It is pointed out, in the report of this investigation, that special consideration must be given to the floor slab in front of a lift, since this area will usually get more traffic than any other part of the building.

Planning

Raised ground floor: It has usually been the practice in the past to provide a raised floor, approximately at tailboard height. The use of mechanical handling

Fig. 4. Loading palletized cases into a lift for movement to a storage area on an upper floor.



technical section

makes a raised floor a doubtful advantage. There are, however, a number of considerations affecting this, and these will be discussed in a future article.

Height: The height of the building is determined by the stacking arrangement. It is wise to make the stacking area as high as possible, since the main advantage of palletized storage is that the floor area can be decreased while maintaining the volume of the building, thus saving in both land and building costs. Unnecessary height must be avoided if heating and lighting costs are not to be uneconomical, as light fittings and also unit heaters, if used, must be mounted above the tie beam of the truss, and both have to be increased in size to compensate for the increased mounting height. There are examples in the U.S.A. of goods being stacked to 30 ft. high; this probably involves the use of overhead gear for raising the load, although fork trucks exist which will lift to this height. A convenient height for warehousing is 16 ft. to 20 ft. clear of all obstructions. The tie beam of the roof truss must be 15 in. to 24 in. above this, to allow for lifting the top pallet and then tilting as the mast of the truck is tilted back before lowering the forks.

If the planning permits, the pre-assembly area can be of less height than the stacking area.

Spacing of stanchions: Ideally, there should be no stanchions in the stacking area, and the warehouse should have a clear span. In a very large warehouse

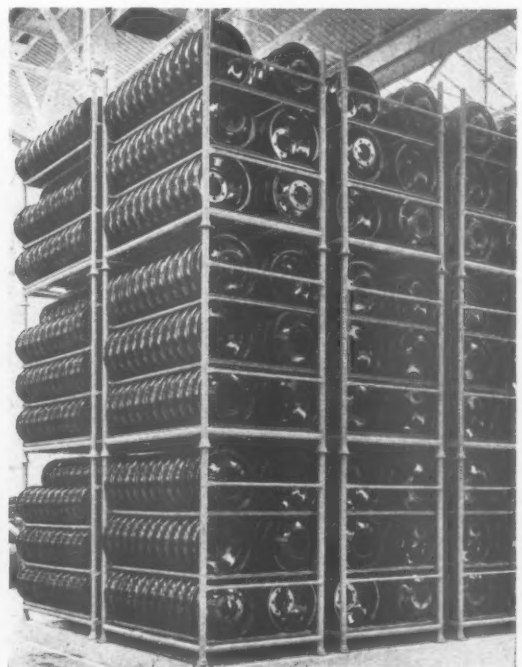
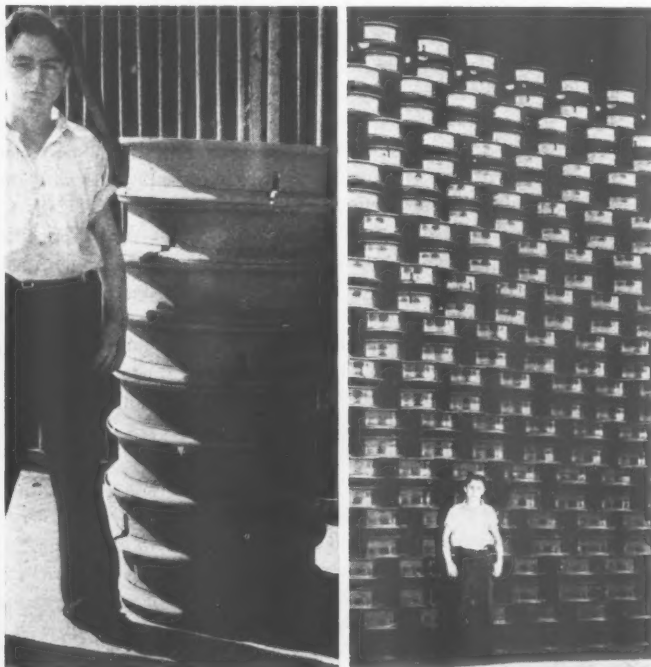
the inconvenience of having stanchions must be weighed against the increased costs arising from a large span, and sometimes the method of stacking may be such that the stanchions can be accommodated in the pallet layout without any loss. One firm which uses its distribution depots for long term storage allows a 12 in. space between pallets to allow for some side movement in the goods stored; in this case the presence of stanchions causes no inconvenience. In the United States stanchions seem to be accepted, and the usual 40 ft. x 50 ft. to 60 ft. grid commonly employed in industrial buildings in America is used.

In adapting an existing building for palletized storage consideration should be given to a diagonal layout of pallets. Such an example is given in Fig. 6.

The placing of stanchions in relation to the wall surface must also be carefully considered. If the walls of the warehouse are flush, pallets can be placed close to them. If the stanchions project, then the storage area must be set out clear of the stanchions instead of clear of the walls, and there is an apparent wastage in floor area. Whether the stanchions should be contained within the walls or allowed to project may, in the absence of any other controlling factor, be determined by the necessity or otherwise of casing the steel to give the required protection against fire. "Buildings used predominantly for storage" are dealt with more harshly under the Model Byelaws than other types of

Fig. 5. Three stages in the development of storage methods at the Dunlop Rim and Wheel Company Ltd. Left, wheels stored in single stacks; centre, "Twinning" the wheels permits higher storage but additional labour is necessary

since wheels have to be passed from hand to hand; right, palletized storage. Pallets are designed to be suitable for any size of wheel or tyre. In the case illustrated 72 wheels are lifted in one operation.



technical section

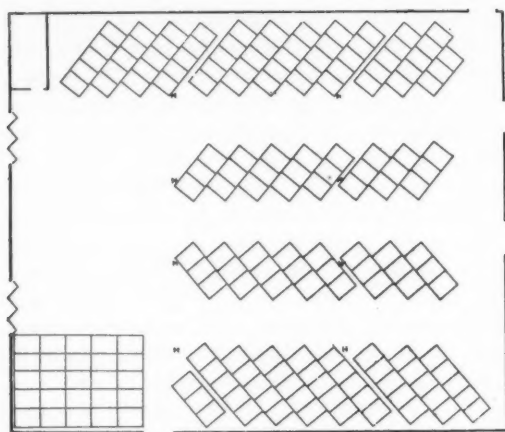


Fig. 6. Diagonal arrangement of pallets to suit stanchion spacing. (CIBA Laboratories Ltd., Horsham).



Fig. 7. External wall built clear of uncased steelwork. (Heinz warehouse, Cardiff.)



Fig. 8. Floor marked out in pallet spaces. (SPD Ltd., Aylesford.)

single storey building, and (subject to cube and relation to site boundaries) a fire grading of two hours is usually required. This means that the stanchions must be cased, and it is convenient to case them in concrete, when they can be built into the external walls. If the byelaw requirements are such that it is unnecessary to case the steel then it is quicker to build the walls clear of the steel; it can be shown that the slight increase in floor area is no more costly than casing the steelwork, while any saving in construction time is always worth while (Fig. 7).

Roof glazing: In the majority of warehouses goods are stacked against the wall (economies in the overall floor area result if one gangway can serve two stacks of pallets, and in warehouses, as in other buildings, circulation space should be reduced as far as possible), so that daylighting must be obtained from the roof. Although at first sight it would appear better for runs of glazing to coincide with trucking aisles this is not necessarily so, and a daylight factor curve should be set up after the pallet layout has been made. Double glazing should be used when it is important to keep the internal temperature as low as possible, but in fully heated warehouses it is doubtful if the increased cost of double glazing is accompanied by an equivalent reduction in heating costs. When perishable goods are stored it may be an advantage to use non-actinic glass, although this is not always readily obtainable.

Door openings: The height and width of door openings must be related to the equipment chosen. A width of 8 ft. is usually sufficient, but if trucks have to make a right angled turn to go through the opening a width of 10 ft. should be used. Salient angles should be protected. A fork lift truck travels with the forks down, so the door head must be high enough to allow for the height of the mast in the unextended position. A useful average height is 10 ft. 6 in., but this must be checked in each case.

Finishings: The finishings to be used will be settled in a warehouse building as they are in all other types of buildings: the most appropriate for the purpose that can be got for money available. The exception to this is the floor finish, which must be the best possible if it is to stand up to the wear imposed by trucking, even when rubber tyred or fibre wheels are used. (The building owner must be warned against the use of steel-wheeled trucks.) As a minimum, granolithic incorporating a metallic hardener or treated with a sealer, should be used. In places where traffic is likely to be concentrated the use of steel faced tiles should be considered. A case can also be made for the use of a jointless flexible floor. In a large building expansion joints must be provided, and the edges of the floor at expansion joints must be protected.

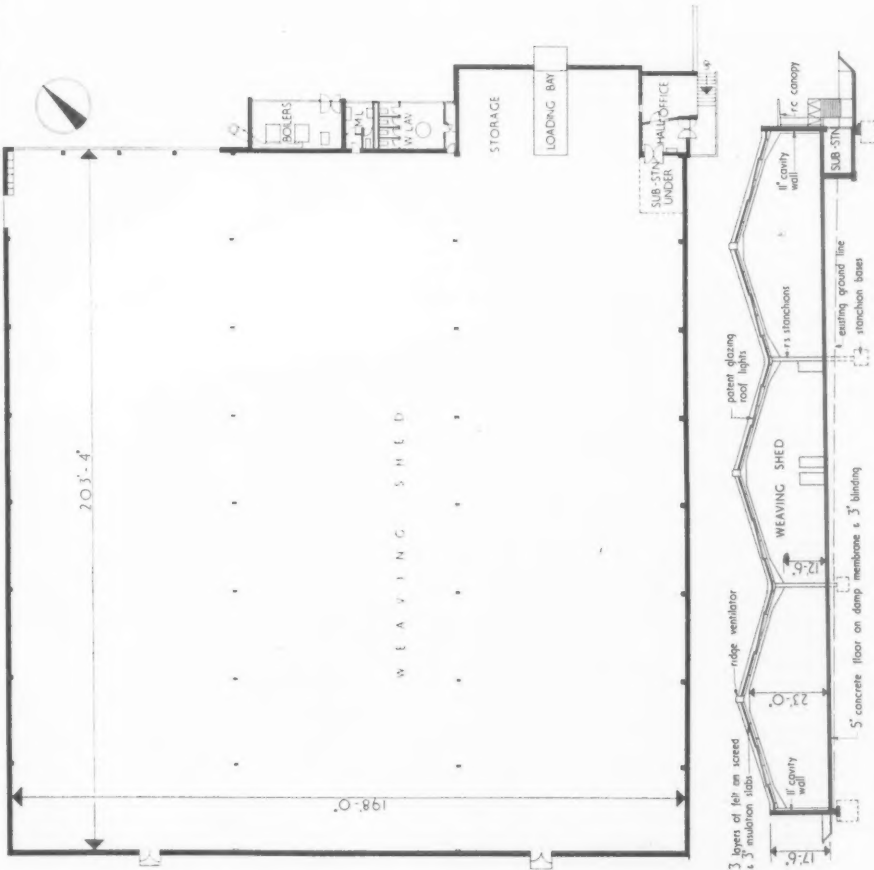
It is desirable to put an expansion strip around the walls, and this can be covered with two projecting courses of engineering bricks to form a skirting. This will be less susceptible to damage by fork trucks than a granolithic skirting. If a granolithic skirting is used it must be free of the wall if floor movement is to be permitted.

ALTERNATIVE CONSTRUCTION COSTS OF A WEAVING SHED AT HACKENTHORPE, DERBYSHIRE

This cost analysis of a weaving shed for British Furtex Ltd. at Hackenthorpe, Derbyshire, designed by Moir and Bateman, differs from the usual analysis in that for each element, costs of alternative methods of construction, considered by the architects during the design, are shown, together with their comments on the choice made. The

most interesting point to note is the remarkable saving of 3s 4d per sq. ft. (or over £7,000) made by using a steel portal frame designed on the plastic theory. Right is a view of the north side of the factory with the entrance and office, loading bay, lavatories and boiler house strung out in a rather un-

prepossessing line in the foreground.



Ground floor plan and cross section [Scale: 1" = 1' 0"]

CLIENT'S BRIEF

To provide at minimum cost and maximum speed a factory for the production of carpets, having a floor area of 42,000 sq. ft. and capable of future extension for a further 42,000 sq. ft. Ancillary buildings consisting of office accommodation, lavatories and boiler house. The factory to be top lit (but not by north lights) and maximum height to the ridge to be 18 ft. An essential requirement was good insulation of walls and roofs, but double glazing had eventually to be omitted on account of cost.

PLAN

To allow future extensions to the south the factory was placed on the north side of the site near to the approach road, the ancillary buildings, including the entrance, being sited to the north.

The site falls 9 ft. in 200 ft. from north to south. The weaving shed is 200 ft. \times 200 ft. with a 2,000 sq. ft. loading bay on the north side. Machinery layout dictated a bay size of 66 ft. \times 25 ft. Steelwork portal frames designed on the plastic theory occur at 25-ft. centres and carry braced purlins and 3-in. channel-reinforced woodwool slabs. 12 ft. deep patent glazing runs practically the full length of each slope of the three bays. Walls consist of facing bricks laid in diagonal pattern except for the south wall which consists of proprietary aluminium cladding on a plinth wall serving as a temporary end. All lighting is fixed directly to the looms and therefore does not appear in the contract sum.

The ancillary buildings are designed with a steel frame, 11-in. cavity walls and wall cladding. The flat roofs are of reinforced concrete insulated with 2-in. cork and covered with three-layer roofing felt with drips to projecting eaves in copper. They are not included in the following detailed analysis, but appear in the cost summary.

WEAVING SHED AT HACKENTHORPE, DERBYSHIRE: continued

cost study



This view of the interior of the weaving shed, taken during erection of the

Element, cost in £s, area of element and cost per

Cost per

Percentage

0

Element, cost in £s, area

Cost per

Percentage

This view of the interior of the weaving shed, taken during erection of the looms, shows the steel portal frames spanning 66 ft., which, being designed on the plastic theory, are of a remarkable slenderness and give a most economical structure. The purlins are bracketed where they meet the main frames and span 25 ft. A Working Detail of the roof will appear in the JOURNAL shortly.

The quantity surveyor was R. G. W. Forde and the general contractors were Frank Haslam Ltd.; for sub-contractors see page 884.

Elements, cost in £s, area of elements, and cost per unit area	Cost per sq. ft. of floor area	Percentage of total cost	Comments	Element, cost in £s, area of element, and cost per unit area	Cost per sq. ft. of floor area	Percentage of total cost	Comments
Work below ground				Corrugated asbestos sheeting.	1s 1d		
Structural work up to d.p.c. level.				£2,300			
£16,450	7s 10d	22		27,900 sq. ft.			
42,000 sq. ft.				Asbestos sheeting as above, with insulation board lining.	1s 11d		Insulation values of all alternatives not so good as construction used.
£5,050	2s 7½d	6.5	Very hard, dustless floor required for trucking.	£4,000			
42,000 sq. ft.				27,900 sq. ft.			
Ground floor finish				Ceiling finish			
Proprietary finish and screed.				2 coats of oil paint to soffits of woodwool.	3d	0.66	
£2,450	1s 2d		Not considered hard-wearing enough.	£530			
42,000 sq. ft.				27,900 sq. ft.			
Frame				Rooflights			
Concrete encasement to beams and stanchions, including formwork and reinforcement. £2,100	1s	2½	Necessitated by local authority regulations.	Patent glazing to slopes.	1s 10d	5	
£11,880				£3,800			
Plastic designed portal steel framework including purlins and painting.	5s 8d	16	66 ft. × 25 ft. span required to suit lay-out of plant.	12,420 sq. ft.			
£11,880				Alternative			
Precast concrete portal frames and purlins.	9s		Cost 60 per cent. more than the steel.	Patent double glazing.	5s 8½d		Amount of heat saved did not warrant extra cost.
£19,000				£12,000			
Roof covering				12,420 sq. ft.			
3-in. channel reinforced woodwool slabs and 2-layer felt, with mineral finish.	4s 7d	13	Good insulation required.	Walls			
£9,600				2½-in. facing bricks at 379s. per 1,000 in external 11-in. cavity walls.	1s 10d	5	
27,900 sq. ft.				£3,800			
Alternatives				1,050 sq. yd.			
Aluminium roof decking	3s 8d			Facing brick plinth 8 ft. high and aluminium wall cladding over to temporary gable end.	7d		
£7,700				£1,250			
27,900 sq. ft.				300 sq. yd.			1.66

WEAVING SHED AT HACKENTHORPE, DERBYSHIRE: continued

Element, cost in £s, area of element, and cost per unit area	Cost per sq. ft. of floor area	Percentage of total cost	Comments
Glass brick walling.			
£350 — = 15s 9d	2d	0.5	
445 sq. ft.			
Internal finishings of fair face brickwork, painted.			
£570 — = 8s 2d	3½d	0.66	
1,400 sq. yd.			
Artificial stone copings and flashings.			
£720 — = 20s 3d	4d	1.0	
710 ft. run			
Artificial stone facings to concrete surfaces including formwork. £2,240	1s 0½d	3.0	
Alternatives			
Proprietary aluminium panel wall cladding.	2s 2½d		
£4,600 — = 88s			
1,050 sq. yd.			
Asbestos vertical sheeting	5d		
£950 — = 18s			
1,050 sq. yd.			
As above with insulation board lining.	9d		
£1,580 — = 30s			
1,050 sq. yd.			
13½-in. solid walls in 2½-in. facings at 350s per 1,000			
£4,720 — = 89s 10d	2s 3d		
1,050 sq. yd.			
Vertical patent glazing	0½d		
£140 — = 6s 4d			
445 sq. ft.			
Not as good for insulation as glass bricks			
Doors and windows			
2½-in. doors, framed, ledged and braced.	1½d	0.33	Fire escape doors
£240 — = 30s 0d			
160 sq. ft.			
Hand-operated steel gates.	1½d	0.33	To loading bay
£240 — = 36s 11d			
130 sq. ft.			
Services			
Heating by oil fired boiler and copper rod strip heating.	3s 4½d	9.5	
£7,140			
Rainwater goods.	1½d	0.33	
£240			
3-in. waterpipe for hose reels and fire hydrants	2½d	0.66	
£500			
Drainage.	1s 6½d	4.5	
£3,270			
Increased costs of labour and materials.	8½d	2.0	
£1,530			
Preliminaries, insurances and water.	1s 8d	4.66	
£3,500			
Total cost of elements actually built			
£75,000 — = 35s 8½d shillings per sq ft of floor area.			
42,000 sq. ft.			
SUMMARY			
Work began: August 1955.			
Work completed: September 1956.			
Weaving shed			Area in sq. ft.
Boiler house, offices and cloaks			42,000
Roads, siteworks, etc.			1,090
Totals			—
			43,090
			87,000
			Cost in £s
			75,000
			8,100
			3,900
			—
			87,000

building illustrated

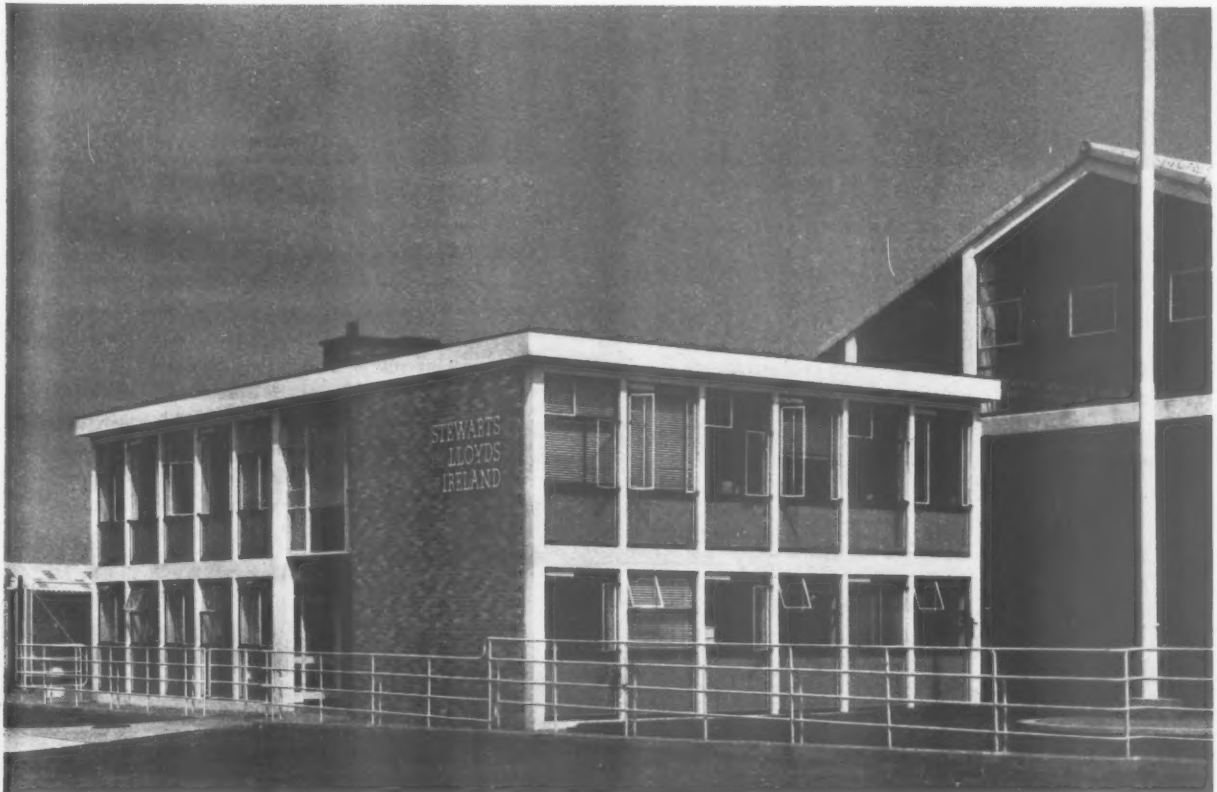
Warehouse, workshop and offices in East Wall Road, Dublin

WAREHOUSE, WORKSHOP and OFFICES

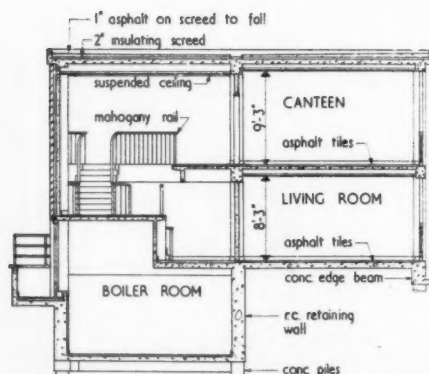
in EAST WALL ROAD, DUBLIN: designed by MICHAEL SCOTT; consultants (structural) OVE ARUP and PARTNERS; quantity surveyors MCGREEVY and GANNON

The two linked buildings analysed this week, a warehouse and workshop building, and headquarters offices, for Stewarts and Lloyds of Ireland Ltd., are a good example of a new approach to old problems. Factory-cum-office buildings in which the office block is regarded as a false front to an unsightly shed are still being built, owing probably to the mistaken conviction that a good-looking industrial building must necessarily be expensive. The warehouse and workshop building illustrated here is of interest because the architect and structural consultants worked together to arrive at an economical design after considering five alternative roof structures.

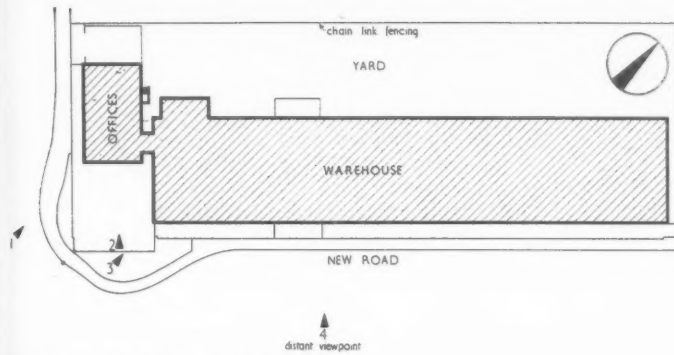
Viewpoint 1: the office block seen from the south, with the gable of the warehouse on the right.



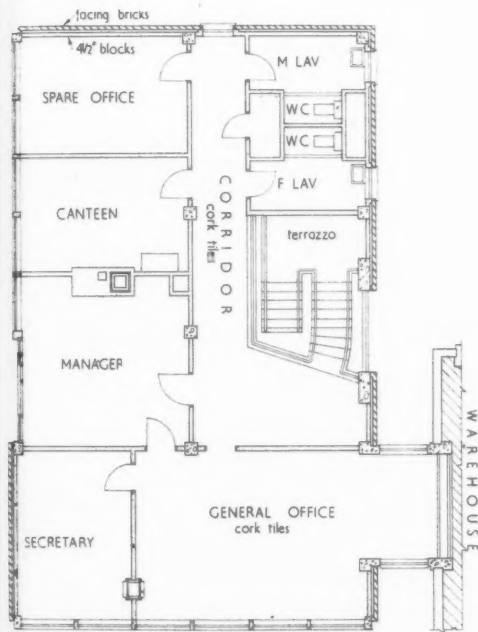
building illustrated

Section B-B through office block [Scale: $\frac{1}{16}'' = 1' 0''$]

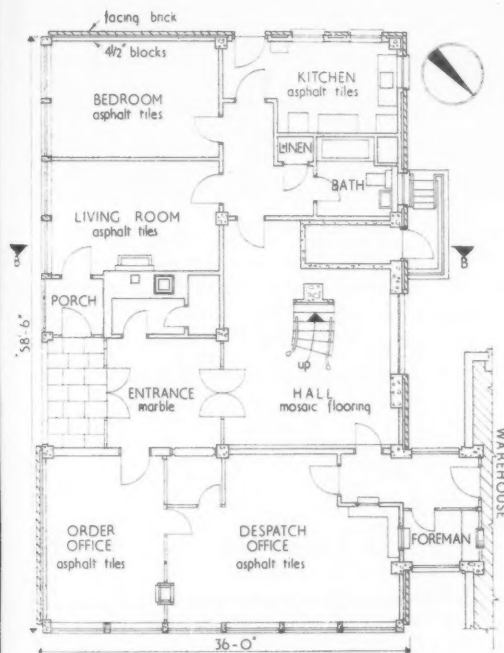
The office block, which also contains the caretaker's flat, is a two-storey structure with a reinforced concrete frame, floors and roof. Where window area predominates over solid wall area, the frame is left exposed and filled with panels consisting of steel windows with wired roughcast glass aprons set in timber frames (viewpoint 2, above, which shows the south-east side.) Larger areas of solid wall are built in 11-in. cavity walling with a brick outer leaf which runs past the concrete frame. Viewpoint 2 also shows the small glazed link between the two buildings; this is occupied by a corridor and works foreman's office on the ground floor and an extension of the general office on the first floor with a large glazed panel giving a view of the interior of the warehouse.



Site plan with photographic viewpoints



First floor plan

Ground floor plan, office block [Scale: $\frac{1}{16}'' = 1' 0''$]

analysis

CLIENT'S BRIEF

A warehouse for steel tubes and fittings, a machine shop where light fabrication work could be undertaken and equipped with machinery for welding, screwing, cutting, grinding, pointing, etc. and headquarters offices for the firm, with living accommodation for a caretaker. The works block roof to be of steel tube construction. A monorail travelling hoist to be provided.

SITE

The area of the site is approximately 44,000 sq. ft., on ground newly reclaimed from Dublin Bay, 300 yards from the new shore line. It is surrounded with open storage, warehouses, factories and undeveloped sites.

Access is from East Wall Road (the original sea wall) and the newly completed Bond Road, on reclaimed ground, on south west and south east sides respectively. The gate in northwest boundary is for the friendly firm next door.

PLAN

General appreciation: The works block is a one-storey shed type building with open roof, 35 ft. to ridge, providing 300 ft. by 60 ft. of undivided floor space for warehouse (storage area) and machine shop. A small annex contains ancillary rooms. The office block has warehouse offices and caretaker's flat on ground floor, and headquarters offices on first floor.

Relation of units: the works block and office block are joined by a short connecting link between their corners. This link incorporates the warehouse foreman's office on the ground floor and a large viewing window on the first floor.

The relationship of the two blocks was originally determined by the fact that before the construction of the road junction at this point one corner of the site curved round a 50-ft. radius. The design of the junction was then changed to incorporate police gates, and although the site boundary was not altered it is no longer visibly expressed, the line of the boundary walls having been changed to conform to the new road arrangement. The arrangement of the two blocks was also determined by the need for the works block to have a separate entrance and exit to permit through traffic, and the desire to leave the maximum area of the site free for future development.

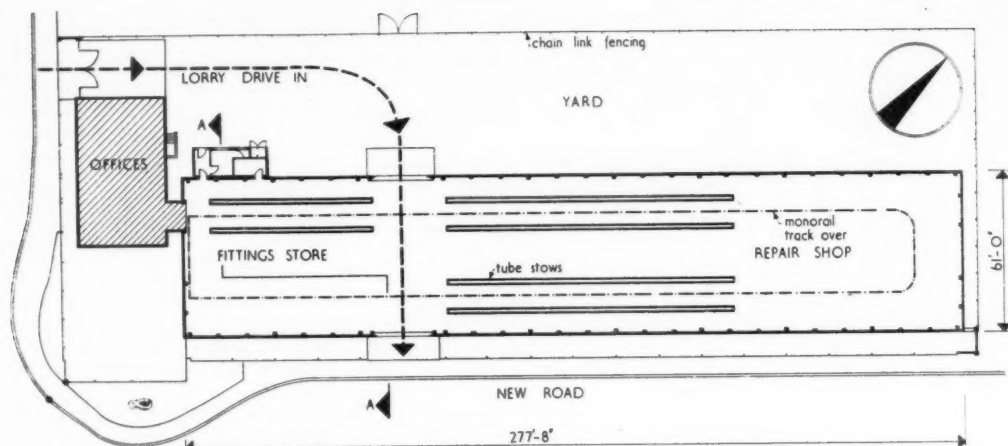
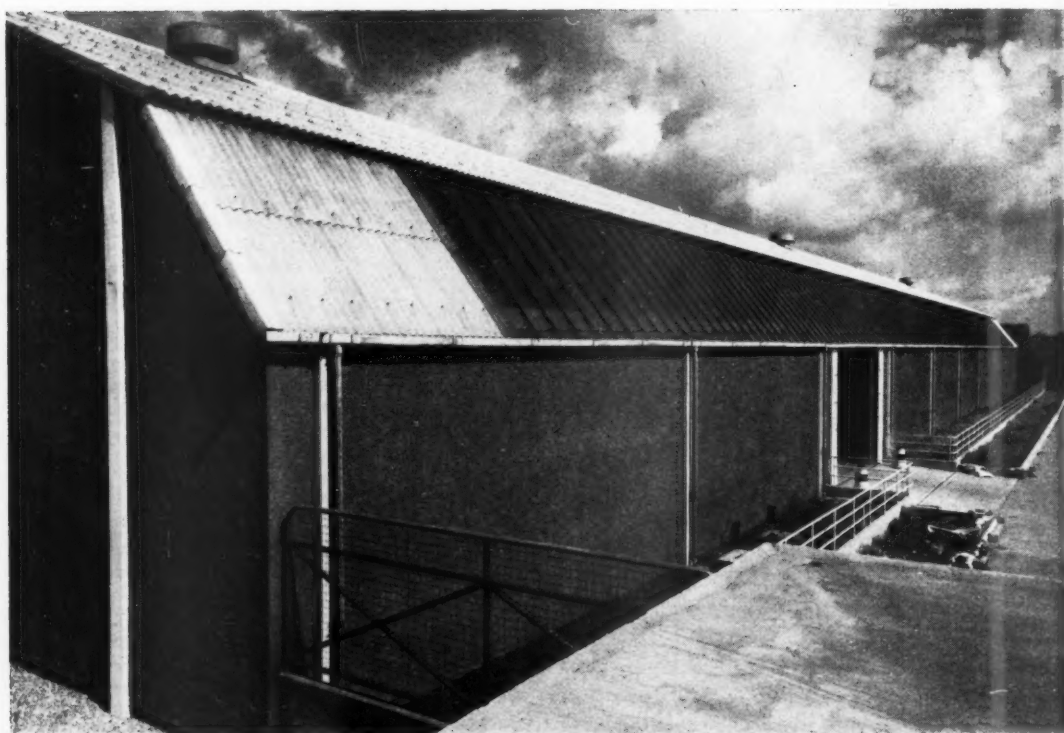
MAIN CONSTRUCTION

Piled foundations, r.c. ground beams and suspended r.c. ground floors.

Works block has r.c. columns, concrete block panel walls with intermediate piers supporting secondary roof elements, tubular steel roof structure of main transverse trusses, longitudinal girders, and secondary centre span and side trusses, covered with asbestos roofing.

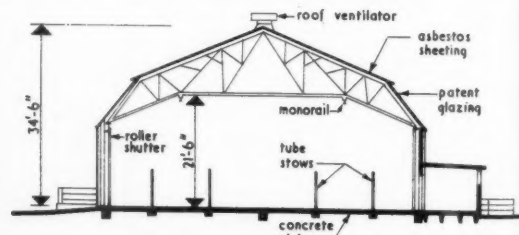
Office block is r.c. framed, part exposed. Non-structural walls are 11-in. cavity, outer leaf in brick. Floors are mainly ribbed slab and roof of flat slab.

building illustrated

Ground floor plan of warehouse and machine shop (works block) [Scale: $\frac{1}{8}$ " = 1' 0"]

The works block has reinforced concrete framed end walls and columns at 33-ft. centres along the side walls to carry the primary roof structure (viewpoint 3, above). The walls are of concrete blocks, rendered on the outside with a grey roughcast finish. The adoption of a roof construction with a Mansard profile enabled the height of the walls to be reduced to the minimum

consistent with the height of the doors, and gave a lower wall height than would have been necessary with level truss ties, making for considerable economy. The opaque parts of the roof are covered with corrugated asbestos sheeting. The photograph, left, taken from viewpoint 4, to the south-east, shows the buildings from the new road across the land reclaimed from Dublin Bay.

Section A-A through works block, showing main truss [Scale: $\frac{1}{8}$ " = 1' 0"]

analysis

cost per sq. ft.	Works block		Office block	
	s	d	s	d
preliminaries and insurances	1	7	3	10½

Works block	s	d	Office block	s	d
	2	1			

STRUCTURAL ELEMENTS

Work below ground floor level 14 8 9 2½

Bored piles throughout, in reinforced concrete, since the reclaimed ground is an unreliable fill.

Office block is partly basement, with r.c. walls and floors for boiler room and oil storage tank.

External walls and facings 2 11 4 4½

Works block: 9-in. solid concrete blocks, finished roughcast, with integral grey colour.

Office block: 11-in. cavity walls of hollow concrete blocks and sand-faced brick in four colours, mixed 40:40:15:5 per cent.

In various parts of the two blocks, the r.c. structure is treated with white textured paint where exposed.

Under the office block windows, cladding is of Georgian wired roughcast glass with insulating backing materials in timber frames.

	solid wall	0.554
Ratios:	Works block:	$\frac{0.554}{1}$
	floor area	1
	Office block:	$\frac{0.410}{1}$

Frame or load-bearing element 1 9 3 10½

Works block: r.c. main columns at 33-ft. centres to support main trusses, and secondary piers of concrete block at 11-ft. centres to support secondary side-trusses. *Office block:* r.c. frame, with grid based on multiples of 5 ft. 7½ in.

Upper floor construction 1 11½

Office block: mainly 9 in. deep ribbed r.c. A pair of ribs are placed close together and slab thickened between on partition lines; also to permit holes through the floor if required on these lines—e.g., for paper hoist.

Staircases 1½ 1 6½

To first floor main rooms in office block, r.c. spine beam and cantilevered treads and risers round open well. Finished terrazzo. Steel balustrade and mahogany handrail. Tubular steel stair to basement. Height from floor to floor: 9 ft. 3 in. Width of staircase: 3 ft. 9 in. overall.

Roof construction 8 11½ 3 8½

Works block: Mansard pitched roof in tubular steel, incorporating a monorail, finished with asbestos. The shape reduces the height of the eaves, reducing walling costs, while providing the required head-room for the monorail.

Office block: r.c. flat roof with eaves upstand, finished vermiculite screed and asphalt.

Roof lights

Patent glazing to works block of Georgian wired glass, with lead-clothed bars. The steep slope indicates evolution from clerestory.

Total area: about 5,520 sq. ft.

Windows 5½ 3 0½

Works block: gables, horizontally pivoted and fixed, in steel, with rod-gearing, and finished zinc-spray.

Office block: generally, top hung or side hung, steel with bronze furniture, zinc-sprayed.

Manager's office: vertical sliding sash windows, of timber with spring balances, mahogany beads.

External doors 11 1½

Works block: collapsible shutter doors of sherardized steel.

Office block: timber, glazed in mahogany beads on main entrance doors.

area windows and external doors
Ratios:

	floor area	
	0.017	0.303
Works block:	$\frac{0.017}{1}$	Office block: $\frac{0.303}{1}$

Glazing 0½ 1 4

Windows throughout, 32-oz. sheet; doors and screens in office block, ¼-in. polished plate.

PARTITIONING

Internal partitions 0½ 1 8½

In office block, solid partitions of 3-in. and 4½-in. concrete hollow blocks, plastered.

Screens 11½

In office block, timber, glazed.

W.c. doors and partitions 0½ 2½

In office block, timber, panelled plywood.

Internal doors 0½ 1 2½

In office block, standard flush doors, finished birch ply generally, mahogany veneer in manager's office.

Ironmongery 0½ 11

In office block, mortice locks incorporating a night latching device, and lever handles generally, of satin anodized aluminium alloy.

FINISHINGS

Floor finishes 4½ 3 10½

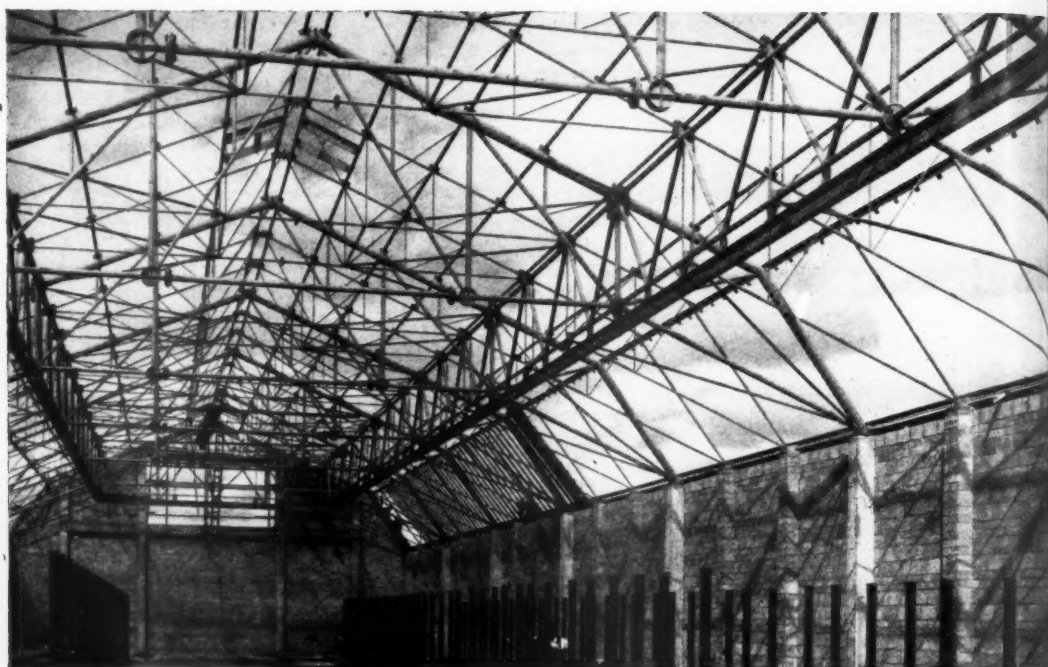
Works block: special in-situ topping, whinstone aggregate with liquid hardener.

Office block: upstairs offices, ⅝-in. cork tiles, laid diagonally. Downstairs offices, ⅝-in. asphalt tiles, laid diagonally.

Caretaker's flat: ⅝-in. cork tiles and ⅝-in. and ⅝-in. asphalt tiles, both laid diagonally.

Entrance hall: Patterned ceramic mosaic.

building illustrated



The roof construction proposed by the structural consultants was of unorthodox design, developed to meet economically the following conditions: (a) a clear height to a monorail of 21 ft. at each quarter-span point, (b) a minimum headroom of 14 ft. at the eaves to allow passage of vehicles. The construction (fig. 1) consisted of main trusses of steel tube spanning approximately 60 ft. at 33 ft. centres, with two longitudinal trussed girders spanning between them at quarter-span, and a further two at the eaves. The ends of the trusses drop to a level of 15 ft. at the eaves to reduce the amount of walling necessary, while maintaining the headroom for the monorails. Between the main trusses, and spanning between the longitudinal girders, are light secondary trusses at 11-ft. centres to support the roof purlins. This construction had three unorthodox features: (a) specially shaped trusses to reduce the eaves' height, (b) spacing of columns under every third truss only, the remaining trusses being carried by longitudinal girders, and (c) positioning of two such girders one over each run of the monorail track. In order to prove that this construction was economically justified, four alternative schemes

were designed and priced. These were as follows: 1. A shaped truss with wide column spacing but no girders at quarter-points (fig. 2). 2. A shaped truss with narrow column spacing (fig. 3). 3. A conventional truss with wide column spacing (fig. 4). 4. A conventional truss with narrow column spacing (fig. 5). In this way each unorthodox feature could be tested for economy. The comparative prices for the five schemes, set out in the table below, included the cost of other elements since these were greatly affected by the differences in structure. For instance, those schemes with a wide column spacing necessitated longer, and therefore, thicker panel walls. The comparison showed that each of the unorthodox features was economically justified, and the original scheme was used, but with one alteration. The outer lightweight secondary trusses, instead of being carried by longitudinal girders at the eaves, are supported on piers formed in the panel walls, an arrangement which made for further economy by allowing the thickness of these walls to be reduced. The photograph above shows the construction before final painting and roof covering.

	Scheme 1. (Basic design).	Scheme 2. Total.	Relative to Scheme 1.	Scheme 3. Total.	Relative to Scheme 1.	Scheme 4. Total.	Relative to Scheme 1.	Scheme 5. Total.	Relative to Scheme 1.
Tubular steel	22.28 tons	22.47 tons	+0.19 ton	18.65 tons.	-3.63 tons	22.02 tons	-0.26 ton	18.20 tons	-4.08 tons
R.s. sections	10.47 tons	11.54 tons	+1.07 tons	11.54 tons	+1.07 tons	7.71 tons	-2.76 tons	7.71 tons	-2.76 tons
Reinforced concrete	£2428	£2428	—	£3111	+£683	£2935	+£507	£3611	+£1183
Excavation	£351	£351	—	£416	+£65	£362	+£11	£424	+£73
Filling and consolidation	£378	£378	—	£446	+£68	£386	+£8	£452	+£74
Non-structural features	£4903	£4903	—	£4824	-£79	£5248	+£345	£5025	+£122
Steelwork in tons	32.75 tons	34.01 tons	+1.26 tons	30.19 tons	-2.56 tons	29.73 tons	-3.02 tons	25.91 tons	-6.84 tons
Cost under other headings	£8060	£8060	—	£8797	+£737	£8931	+£871	£9512	+£1452

Note: The costs and weights shown hereon represent only those parts of the warehouse structure affected by changes in design. Such items common to all designs as floor slabs, gable footings, and rising walls, filling to formation, pipe stows and kerbs, steel gates, drainage, site preparation, etc., are entirely omitted.

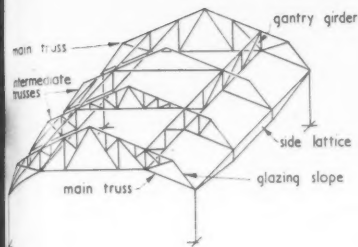


Fig. 1

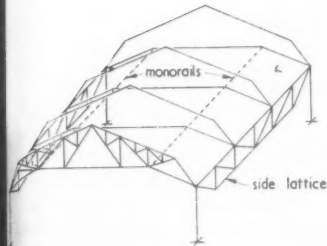


Fig. 2

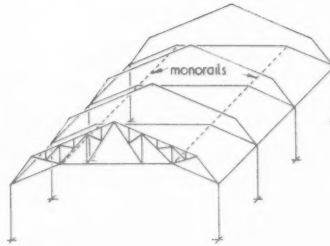


Fig. 3

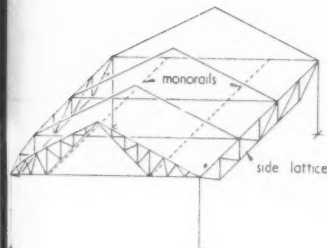


Fig. 4

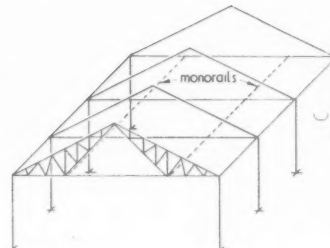


Fig. 5

The last photograph, below, shows the finished job; the main trusses and longitudinal girders have been painted black and all subsidiary members white. A Working Detail of this roof was published in the JOURNAL on May 15, 1958.



analysis

Works block	Office block
s d	s d
4½	3 2½

Wall finishes

Works block: fair-faced blockwork.

Office block: gypsum plaster generally. Some wall tiling and tiled skirtings.

Ceiling finishes

Office block: upstairs, suspended patent heated ceiling, finished metal tiles. Downstairs, plasterboard, on battens on ribs, finished gypsum plaster. Some slab soffits plastered.

Decorations

Office block: ceilings and walls generally, B.S. 5-059 (flat). Slab soffits, BS 5-061 (flat). Joinery generally and structural members, white (high gloss and flat). Flush doors, glazing beads, etc., BS 6-073 (high gloss). *Works block:* Roof steelwork, black main members, white secondary members. Monorail, BS 0-005. Gable walls, BS 8-088.

FITTINGS

Works block	Office block
Steel stowage posts.	2 0 1 7½
Office block: Bookcases, etc., in hardwood.	
Kitchen in caretaker's flat, EJMA type fittings, plastic topped.	0½

SERVICES

External plumbing	
<i>Works block:</i> gutters and downpipes of asbestos.	4 2½
<i>Office block:</i> central downpipe in duct, of cast iron.	

Internal plumbing

Waste disposal: two-pipe system. Duct near north-west corner of office block. Cast iron in ducts, copper where exposed. Cold water installation: mains supply to 250-gallon storage-tank over w.c.s on first floor. Copper pipes.

Sanitary fittings

Works toilet, staff toilets, bathroom in caretaker's flat: vitreous china generally.

Heating installation

Low-pressure hot water, accelerated. Ground floor: radiators and exposed pipework of mild steel with heat-resisting paint. First floor: patent heated ceiling, pipes behind metal tiles. "U" values: walls 0.3 (11-in. cavity walls). Roof 0.22 (6-in. concrete, vermiculite screed and asphalt).

Boiler type and capacity

(Cost included under heating installation.) Oil-fired boiler, 207,000 B.Th.U./hr. in basement boiler room of office block. Designed for 65° F. internally for 32° F. externally. Compensator control system fitted to heating. Average air change, 1½ per hour.

analysis

	s	d	s	d
	Works		Office	
	block		block	
Hot water installation		0½		6¾
Indirect system, calorifier in boiler house.				
Drainage	1	2½	1	2½
Separate system. Rainwater to street surface water sewer, soil and waste to septic tank.				
Gas installation			7	
Mains supply, with separate meters for caretaker and works block.				
Cooker in caretaker's flat. Blast furnace in machine shop.				
Electrical installation	2	3	2	4
<i>Works block:</i> storage area, mercury vapour, machine shop, mercury vapour fluorescent.				
<i>Office block:</i> incandescent.				
Generally, v.i.r. in galvanised conduit, p.v.c. in conduit where embedded in machine shop floor.				
A.C. power supply				

OTHER ELEMENTS

	1	2	1	2
Boundaries				
Chain mesh and concrete posts on internal boundary.				
Tubular welded railings on external boundaries, on concrete curb.				
Paved areas	5		2	0½
Entrance and exit ramps to works block, entrance to yard ramp, and approaches across waste ground from East Wall, in situ r.c. paving, star rolled or grooved, with smooth margins.				
Total cost per sq. ft. floor area:				
Works block: £39,421			43	1½
18,291 sq. ft.				
£15,999				
Office block: —			71	1½
4,500 sq. ft.				

SUMMARY

	Works block	Office block
Total ground floor area of superstructure	18,291 sq. ft.	2,082 sq. ft.
Total floor area (excluding basement)	18,291 sq. ft.	4,163 sq. ft.
Total floor area of basement	—	337 sq. ft.
Storey heights of basement	—	9 ft.
Total depth of basement	—	11 ft.
Tender date: Sep. 26, 1955		
Work began: Oct. 3, 1955		
Work completed: Nov. 1956		
Cost of superstructure, installations and finishes	£34,108	£14,280
Cost of foundations and basement	£2,763	£733
Cost of external works	£2,550	£986
Gross total cost	£39,421	£15,999
Cost per sq. ft. of floor area	£2.143s. 1½d.	71s. 1½d.

COST COMMENTS

The dissimilarity between office block and factory block is very graphically shown in the cost analysis.

Office block: A fairly high proportion of the money has gone into finishes. For example the entrance hall and vestibule have a terrazzo finished staircase and mosaic floor. If readers wish to compare the heating cost of this building with other buildings they should note that the patent heated metal tile ceiling to the first floor is included in the ceiling costs.

It should be noted that the inclusion of a caretaker's flat with the office block has increased the overall cost per square foot by the provision of separate service requirements and more subdivided planning.

Factory block: The low cost of this block is due to use of economical materials, e.g. self-finished concrete wall blocks and asbestos cladding. Some costs which in other building types would be in the external walls, are here in the roof; by use of (1) a low eaves line and (2) roof patent glazing as the main natural lighting. This case emphasises the need to consider the whole of the structural elements together when comparing planning solutions.

The analysis shows that it is as cheap (per sq. ft. of surface) to drain surface water from a large area with correspondingly increased pipe size as it is the small office block area.

CONTRACTORS

General contractors: McLaughlin & Harvey Ltd. *Sub-contractors:* *Electrical services:* Roche & McConnell. *Light fittings:* British Thompson Houston Co., Merchant Adventurers Ltd., George Forrest & Son. *Heating and water supply:* Hadens Engineering Co. *Steel pipes:* Stewarts and Lloyds of Ireland Ltd. *Radiators:* Veba. *Ceiling heating:* Frenger Ceilings Ltd. *Structural steelwork:* Smith & Pearson. *Steel windows:* Onslow & Randel, Ringlas and Simth & Pearson. *Tubular railings:* Kennan & Sons. *Patent glazing:* Pennycook Patent Glazing Co. *Collapsible shutter gates:* Bolton Gate Co. *Chain link fencing:* Federated Engineers Ltd. *Overhead hoist:* Aabacas Engineering Co. *Roof ventilators:* Greenwood's and Airvac Ventilating Co. *Flooring:* Verso Bros. *Mosaic:* J. Crean & Sons. *Door furniture:* Irish Overseas Importing and Exporting Co. *Gas:* Dublin Alliance and Consumers Gas Co. *Staircase balustrade:* City Engineering Co. Ltd. *Signs:* Signs and Metal Products Ltd. *Sanitary ware:* Davis King & Co. *Paints and colouring agents:* Thomas Parsons and Sons, Sealcrete Products Ltd. *Roofing:* Asbestos Cement Ltd., South of Ireland Asphalt Co. *Intercomm. telephones:* Sound Systems Ltd. *Sandfaced bricks:* Kingscourt Brick Co.

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working detail

BALCONIES: 27

BALCONIES: FLATS IN GENEVA

R. Passera, architect (material supplied by Dariush Borbor)

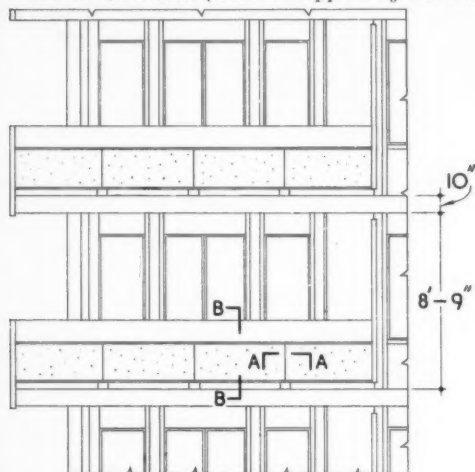


The corner balconies of this tower block were designed to give the widest possible outlook. The whole balustrade was prefabricated, and interior shelves for flower boxes are provided.

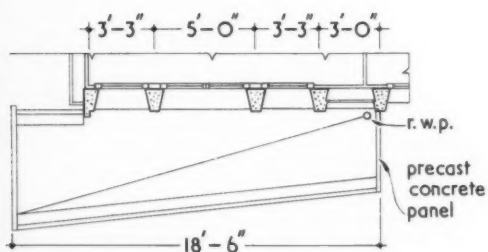
working detail

BALCONIES: FLATS IN GENEVA

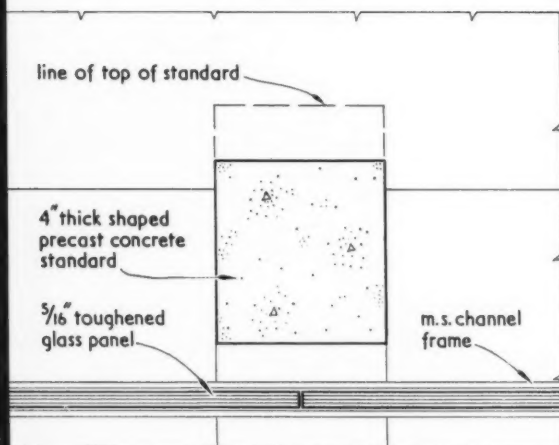
R. Passera, architect (material supplied by Dariush Borbor)



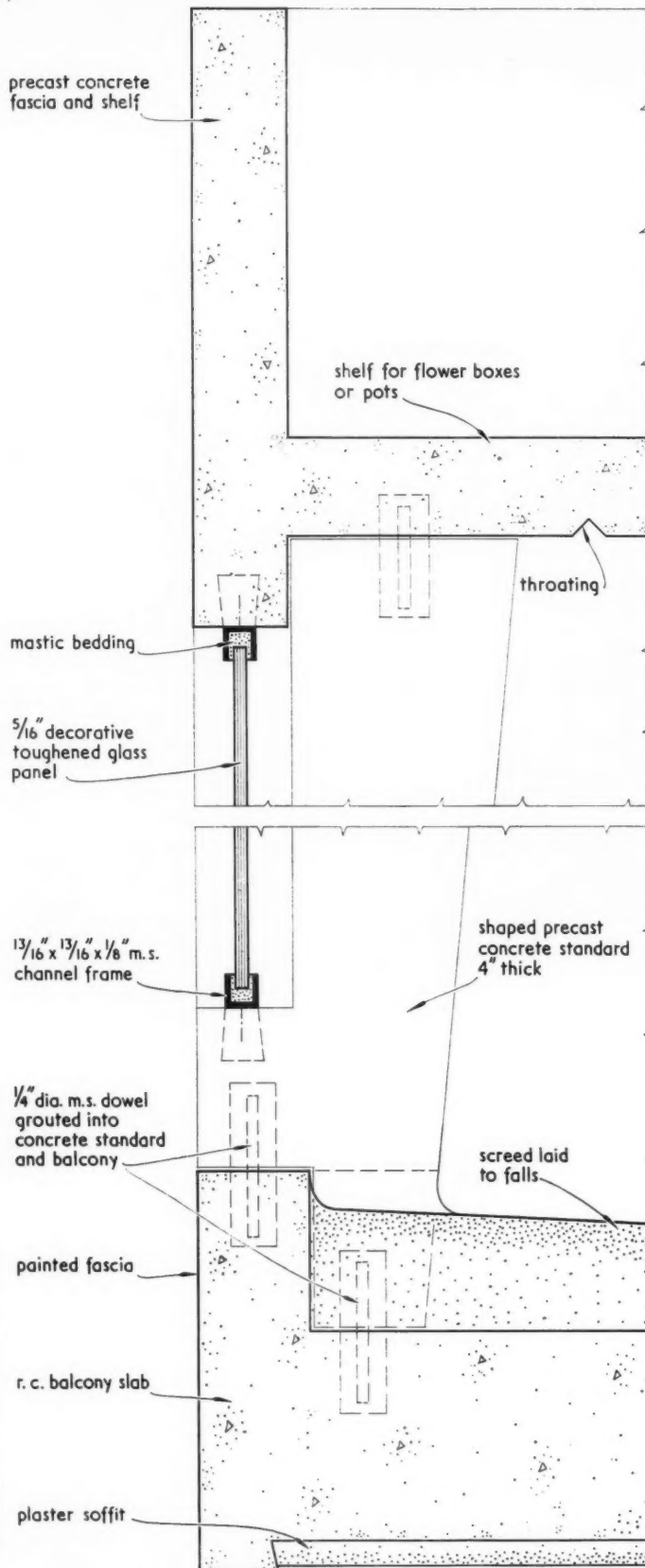
ELEVATION. scale $\frac{1}{8}'' = 1' - 0''$



PLAN. scale $\frac{1}{8}'' = 1' - 0''$



PLAN AT A-A. scale $\frac{1}{4}$ full size



SECTION B-B.

note: figured dimensions in feet and inches are approximate

working detail

ROOFS AND CEILINGS: 47

ROOF: FACTORY AT POOLE, DORSET

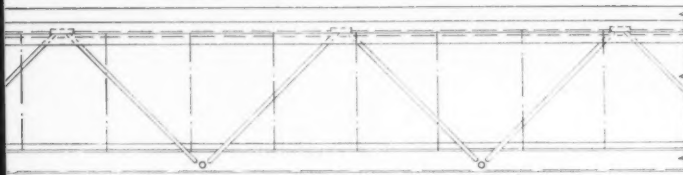
Farmer and Dark, architects



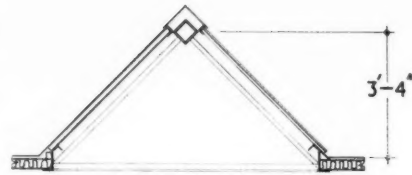
The space frames for the roof glazing consist of tubular members welded to 6-in. by 3-in. angles at the base, and at the apex to a box section composed of 5-in. by 2½-in. channels. The remainder of the roof is of channel-reinforced wood-wool slabs, screeded and finished with roofing felt.

ROOF: FACTORY AT POOLE, DORSET

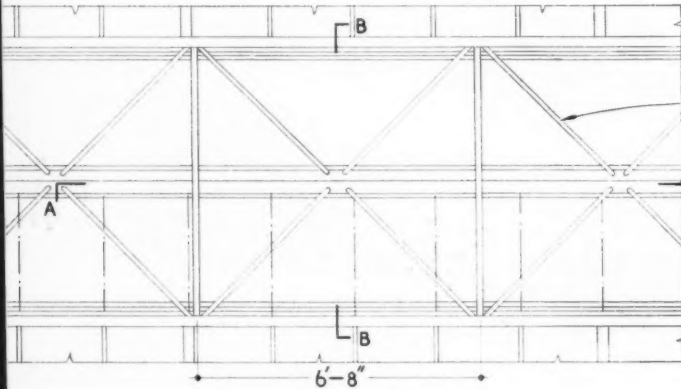
Farmer and Dark, architects



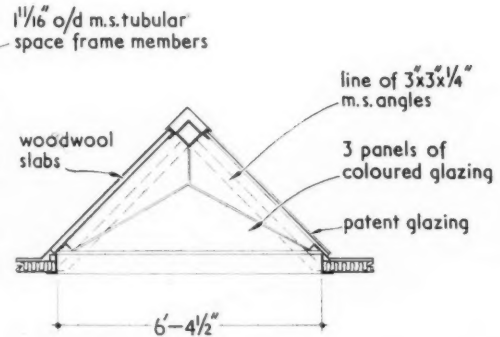
SECTION A-A. scale $\frac{1}{4}" = 1' - 0"$



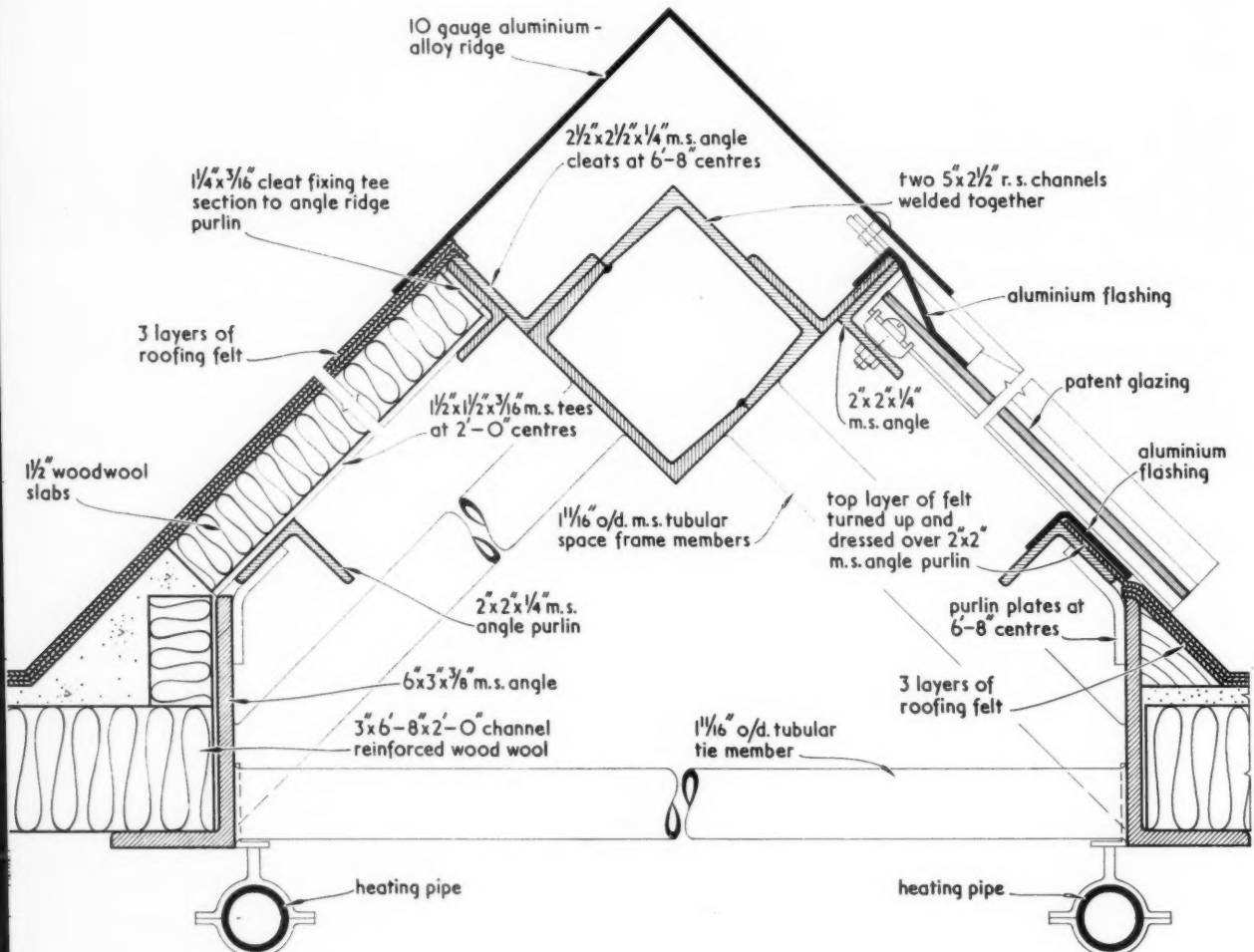
SECTION



REFLECTED PLAN. scale $\frac{1}{4}" = 1' - 0"$



END ELEVATION.



SECTION B-B. scale $\frac{1}{4}$ full size

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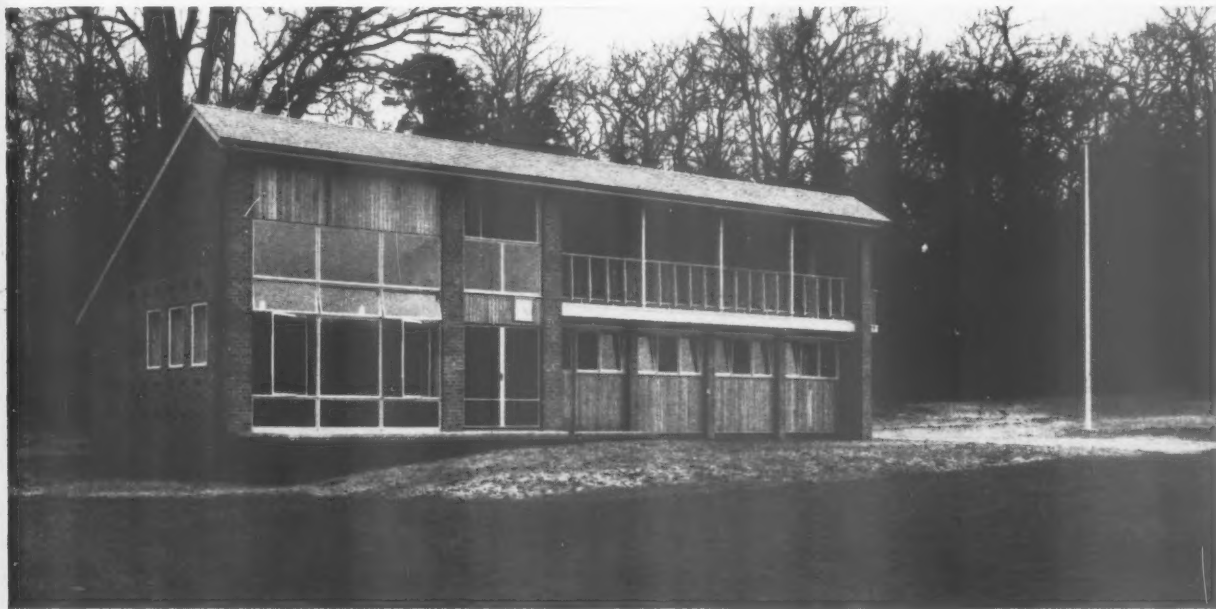
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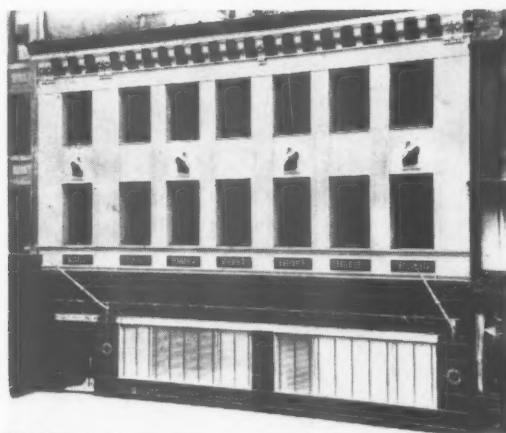
ED

CRICKET PAVILION AT KING EDWARD'S SCHOOL, WITLEY, SURREY



King Edward's School, Witley, Surrey, is one of the independent secondary schools which have been building extensions and improvements to keep in step with post-war educational needs. One of the new buildings recently opened is the cricket pavilion shown above, designed by G. D. Sykes. Brick load-bearing cross walls and spine wall carry a balcony and a roof of light construction, finished with cedar shingles. Exposed structural walls are faced with a local brick, and infilling panels with untreated vertical cedar-boarding. General contractors, Chapman, Lowry & Puttick.

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Contractors

Weaving Shed at Hackenthorpe, Derbyshire (pages 871-874). *Architects:* Moir and Bateman, A./A.R.I.B.A. *Quantity surveyor:* R. G. W. Forde, A.R.I.C.S. *General contractors:* Frank Haslam Ltd. *Sub-contractors:* *Roofing:* D. Anderson & Son Ltd. *Sliding doors:* The Bolton Gate Co. Ltd. *Facing bricks:* Blockleys Ltd. *Cemglaze wall finish:* Cement Glaze Ltd. *Steelwork:* The Conder Engineering Co. Ltd. *Terrazzo:* Conways (Tiles & Terrazzo) Ltd. *Patent glazing:* Crittall Manufacturing Co. Ltd. *Ironmongery and balustrades:* J. Gibbons Ltd. *Reinforcement:* G.K.N. Reinforcement Ltd. *Heating:* G. N. Haden & Sons Ltd. *Faience tiling:* Shaws Glazed Brick Co. Ltd. *Wall cladding:* Robertson Thain Ltd.

G. H. B. Chantrey, A.R.I.B.A., is now practising from 10, Brook Street, Stoke-on-Trent, Staffs (Stoke-on-Trent 48636), and would be pleased to receive catalogues.

Derek Phillips, A.R.I.B.A., has resigned from his staff appointment as architectural consultant to the A.E.I. Lamp & Lighting Co. and is in practice as an architect and lighting consultant to architects and the lighting industry. He will be glad to receive technical advertising at 13, Oppidans Mews, N.W.3.

R. D. Manning, A.R.I.B.A., has resigned from the Ministry of Works, Bristol, to take over the practice of Stanley Natusch, A.R.I.B.A., A.A.Dip., A.M.I.Struc.E. The practice will be carried on with the title Natusch & Manning, Hill Top, Park Road, Bridport, Dorset (Bridport 2804).

K. H. Bole, F.R.I.C.S., has now moved his London Office to 22, Little Russell Street, W.C.1 (Chancery 2679).

Denis Clarke Hall, F.R.I.B.A., A.A.Dip. and Sam Scorer, A.R.I.B.A., A.A.Dip. (HONS) have taken Roy Bright, A.R.I.B.A., A.A.Dip., into partnership at 200, High Street, Lincoln.

The Shrewsbury office of Abbey & Hanson has been transferred from 11, Wyle Cop. to 12, Belmont, Shrewsbury (Shrewsbury 4722).

TRADE

Nettle Accessories Ltd. have appointed B. Tolhurst as Sales Representative in South West England and South Wales.

J. A. Crabtree & Co. Ltd. are holding an exhibition of their products at The Grand Hotel, Sheffield 1, from June 9 to 14.

The attention of the Board of Venesta Ltd. has been drawn to continuing reports that a bid is about to be made for the Ordinary Shares of the Company. They wish to state that no offer or approach of any kind has been made to them, nor have they any reason to expect one.

Richard Taylor, joint Managing Director of Boulton & Paul Ltd., Norwich, is retiring from the Company and its subsidiaries owing to ill-health. J. S. Murray is succeeding him as joint Managing Director. F. Russell and L. R. Measures, who have been joint Managers of the Structural Engineering Department for some years, will now assume full responsibility for that Department.

Crompton Parkinson Ltd. announce the following changes in the management of their London Supplies Division Branch Office. R. C. Gorrings, who has suffered from ill-health for some time, has relinquished his post as Branch Manager and D. G. Bowl who was assistant to Mr. Gorrings has been appointed Manager. The new Assistant to the Branch Manager is W. F. Griffiths.

Announcements

PROFESSIONAL

S. Nelson Hewitt, A.R.I.B.A., has now left England for Australia and his new address will be 37, The Crescent, Midland Junction, Perth, Western Australia.

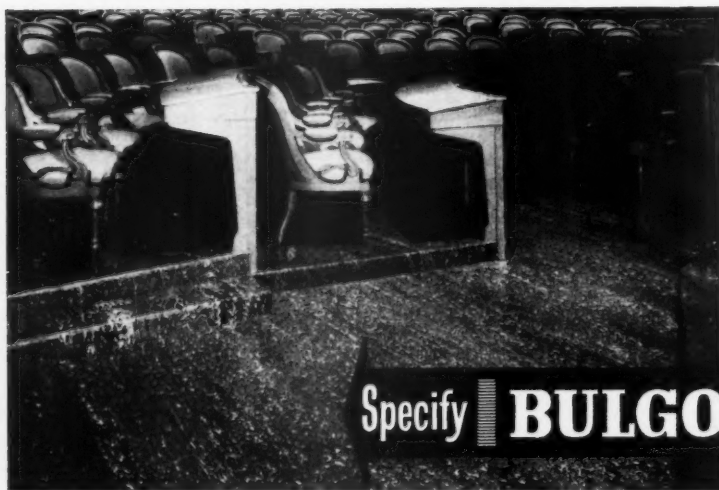
Olga Ford is taking a party of students of architecture to the Brussels Exhibition from July 5 to 13, and has a few vacancies left. Anyone interested should write to her at 30, Elmfield Avenue, Leicester.

G. Desmond Fairfoot, B.A.(Arch.), A.R.I.B.A., formerly assistant editor of *Architecture and Building*, is now practising under the style of Thompson and Fairfoot, at the new address of 228, Fulham Road, London, S.W.10 (Flaxman 6533), where he will be pleased to receive trade literature.

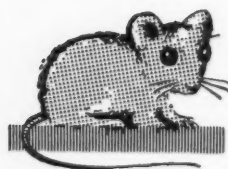
Correction

In the contractors' list for Balls Park Secondary School, Hertford (AJ, April 24), Seco was credited with supplying the panels used for partitions on the upper floors. In fact, the 9,456 sq. ft. of asbestos-faced panels used externally were also Seco panels.

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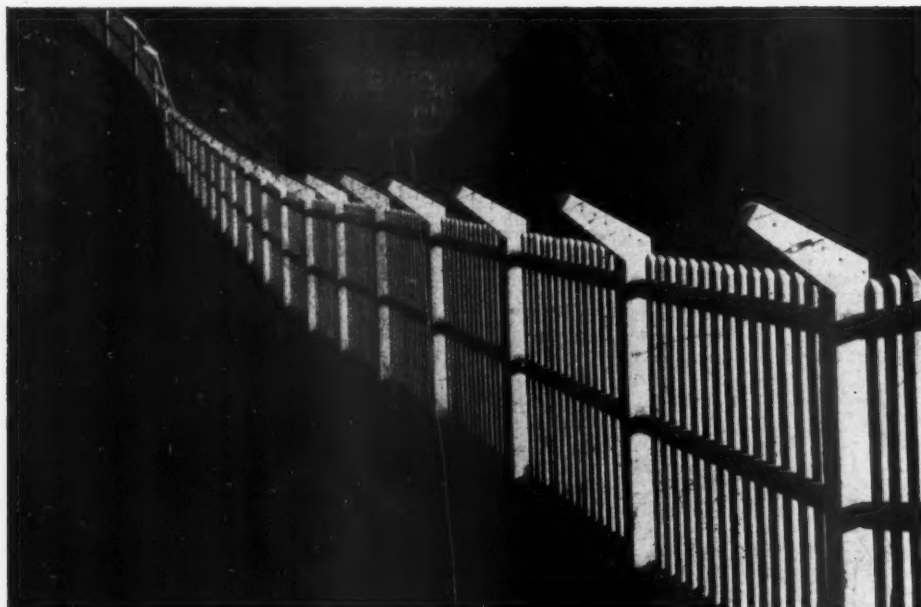


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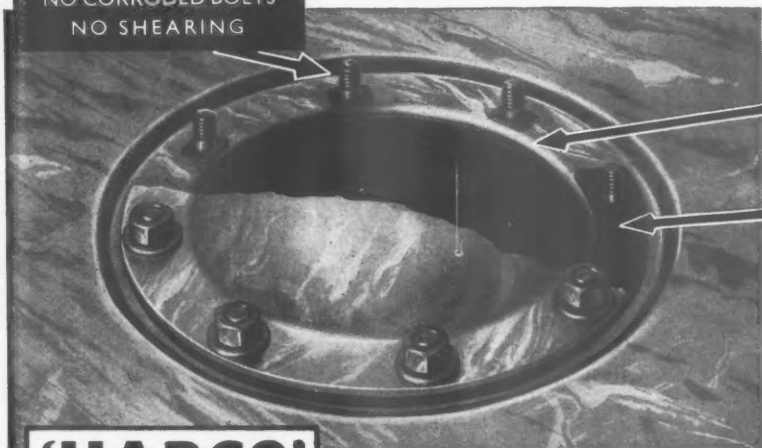
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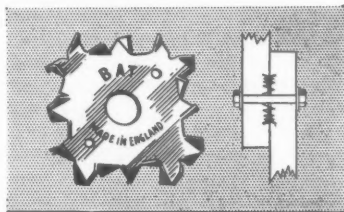
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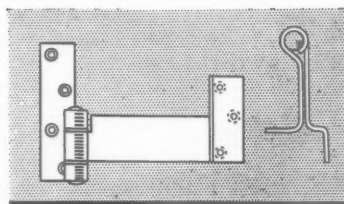
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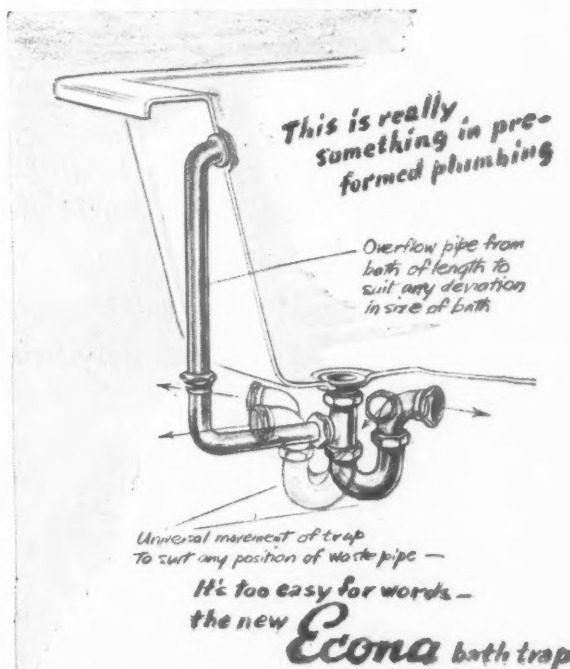


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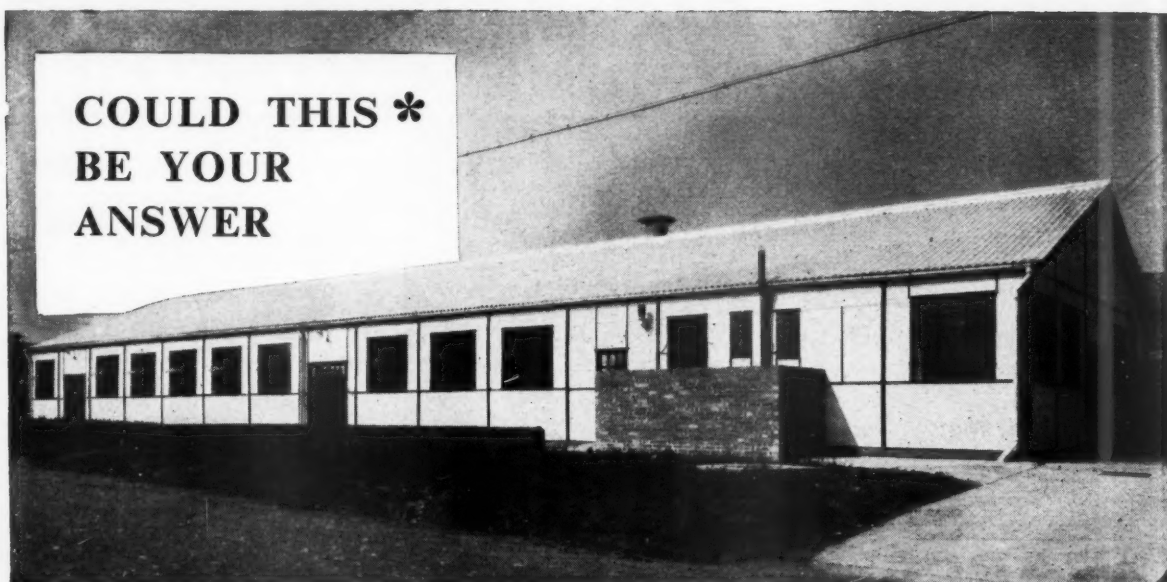
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In his preface Nervi says: 'My belief in the inherent aesthetic force of a good structural solution was never shaken.' His genius is such that he not only intuitively creates surprisingly daring and original architectural forms; he also calculates them, thinking out and solving constructional problems down to the last detail; and then he builds them. He thus achieves a synthesis between art and science such as only Maillart and Perret have previously achieved in our time. His concepts are truly three-dimensional in character: form and content are fused into a single spatial diagram. Most of his commissions have, nevertheless, been awarded not primarily on the basis of their incredible daring and beauty but because they cost so much less than comparable structures by anyone else.

Because Nervi's work so clearly reveals the immense possibilities offered to architects and engineers by reinforced concrete the book devotes much space to illustrating and explaining the details of his designs, his methods of building with prefabricated elements.

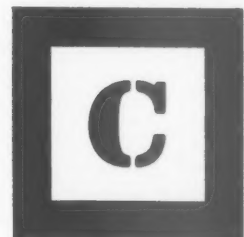
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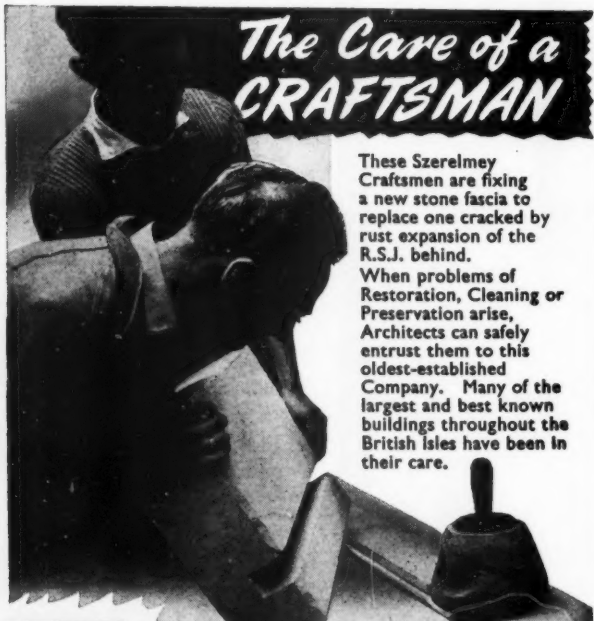
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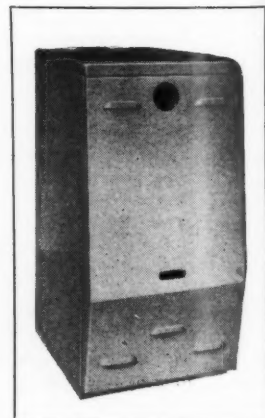
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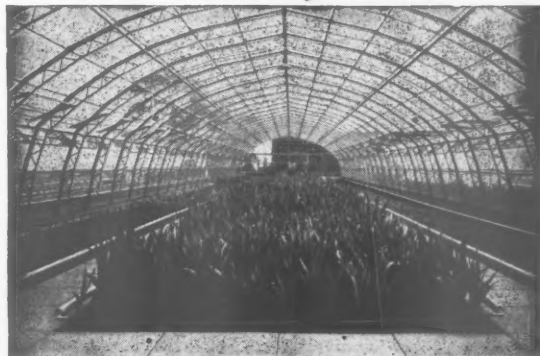
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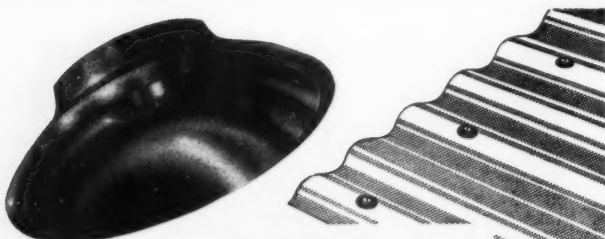
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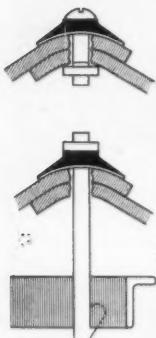
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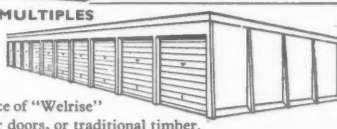
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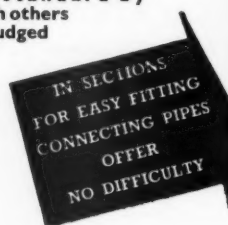
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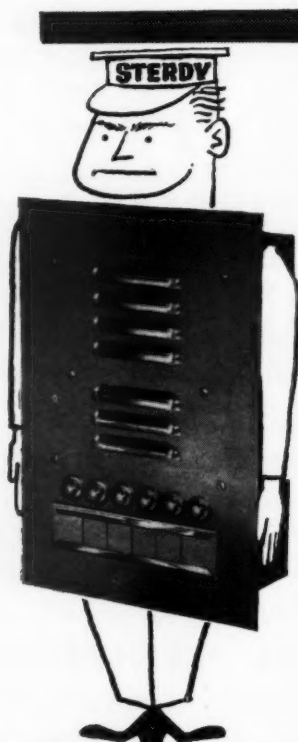
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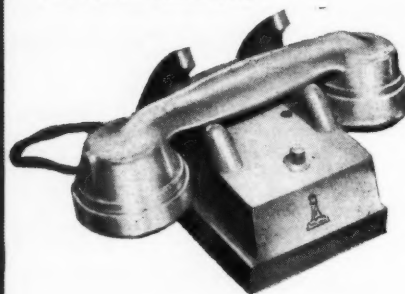
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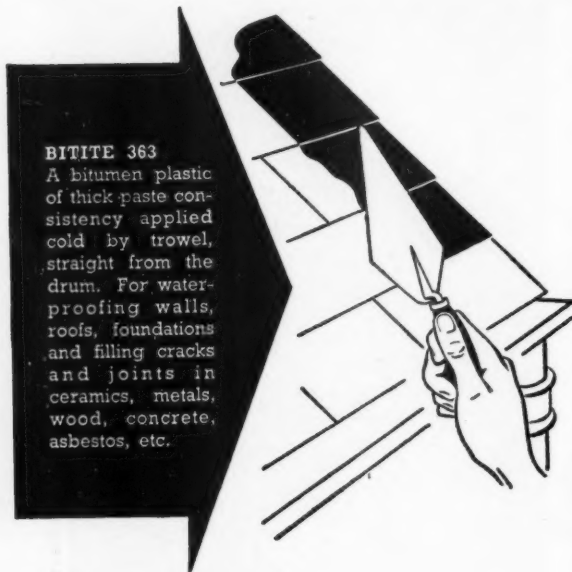
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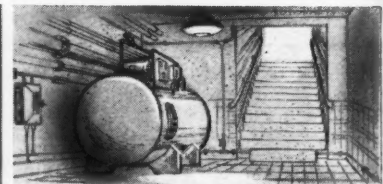
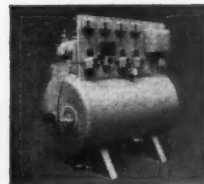
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Replies to Box Numbers should be addressed to "The Architects' Journal," at the address given above.
Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Public and Official Announcements

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**LONDON COUNTY COUNCIL
QUALIFYING EXAMINATION FOR THE
OFFICE OF DISTRICT SURVEYOR**
An examination for certificates of proficiency to perform the duties of District Surveyor will be conducted in London in the week commencing 11th October, 1958. The minimum age limit for candidates is 25.

Possession of this certificate is necessary for appointment to positions as District Surveyor salary scales £1,500 to £2,900 a year) or as Assistant District Surveyor (salary scales £1,245 to £1,482 10s. a year, plus allowance £59 a year). Apply to The Architect to the Council (AR/ED/CTB), County Hall, Westminster Bridge, S.E.1, for application forms and further particulars (70). 9328

**LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT**
Vacancies for SURVEYING ASSISTANTS in the Building Regulation Division for building control work in connection with applications under the London Building Acts and Bye-Laws as regards compliance with the Council's construction and means of escape standards. Salaries up to £260, with starting rates according to qualifications and experience. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting Ref. AR/EK/5158. (775) 9373

QUANTITY SURVEYING ASSISTANTS required by Air Ministry Works Directorate in London and Provinces. Grade and commencing salary based on not less than 3 or 5 years' previous experience under Quantity Surveyor or Building Contractor. Approved full time study will count towards 5 years period. Qualifications required O.N.O. (Building) or (Builders Quantities) or equivalent. Duties include abstracting and billing, site measurement and preparation of estimates. Commencing salary and grading according to age, qualifications and experience on salary ranges (a) £245 (age 25), rising to £275, or (b) £295 (age 26), rising to £370 in London. Salaries somewhat lower in Provinces. Promotion and pensionable prospects. 6-day week, three weeks leave a year. Appointments carry liability for service anywhere United Kingdom or overseas. Applicants normally should be natural born British subjects. Write, stating age, qualifications and previous appointments, including type of work done to Manager, Professional and Executive Register, Ministry of Labour and National Service, Atlantic House, Farringdon Street, E.C.4, quoting reference PE.105/745. No original testimonials should be sent. Only applicants selected for interview will be advised. 9393

**DUNGANNON RURAL DISTRICT COUNCIL
WHOLE-TIME QUALIFIED ARCHITECT**
Applications are invited for the above appointment in the Council's Engineering Department at a salary scale of £1,250-£40-£1,250. Applicants must be Associate Members of the Royal Institute of British Architects and if not possessing a Town Planning qualification should have had experience in a Town Planning Office. Some of the duties on which the Officer will be mainly engaged consist of New Housing, Slum Clearance, Redevelopment, Conversion and Improvement, and work of a Planning nature. The appointment will be subject to the Local Government Superannuation Acts and a medical examination. Applications stating age, past and present appointments, qualifications, and experience, together with copies of three recent testimonials should be delivered to the undersigned not later than Wednesday, 11th June, 1958. Canvassing in any form will disqualify. C. A. IRWIN, Clerk of the Council.

Rural District Council Offices, Dungannon, County Tyrone, N. Ireland. 9537

**CITY OF BRADFORD
ARCHITECTURAL ASSISTANT**
Applications are invited for the appointment of an Architectural Assistant (Post No. 204) at a salary in accordance with Special Grade (£750-£1,030); commencing salary in accordance with experience and qualifications. Candidates should have had experience in the design of houses, flats and shops and the layout of housing estates, have sound design ability and be experienced in the preparation of working and detail drawings. Applications on forms to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, 1, together with three testimonials, must be received by the undersigned by 16th June, 1958. W. H. LEATHER, Town Clerk. 9536

Town Hall, Bradford, 1.

**DENBIGHSHIRE COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT**
The above Council invite applications from suitably qualified persons for the following appointments, viz:-

- CHIEF COUNTY PLANNING ASSISTANT, A.P.T. Grade IV (salary £1,025-£1,175 per annum).
- SENIOR COUNTY PLANNING ASSISTANT, A.P.T. Grade IV (salary £1,025-£1,175 per annum).
- DEPUTY AREA PLANNING OFFICER (Wrexham), special scale (salary £750-£1,030 per annum).

Appointments (a) and (b) are to the Headquarters Staff of the County Planning Department at Ruthin and appointment (c) is to the Area Planning Office Staff at Wrexham.

Application forms and further particulars can be obtained from the undersigned. Completed applications, giving the names of two referees, must be returned not later than 20th June, 1958. W. E. BUFTON, Clerk of the County Council.

County Offices, Ruthin, Denbighshire. 9533

**CITY OF CARDIFF
APPOINTMENT OF ARCHITECTURAL STAFF**

Applications are invited for the following appointments in the City Architect's Department:-

- ASSISTANT ARCHITECT, Special Grade (£750-£1,030).
- ARCHITECTURAL ASSISTANT, A.P.T. Grade II (£725-£845).
- ARCHITECTURAL ASSISTANT, A.P.T. Grade I (£575-£725).

Candidates should possess the minimum qualifications and experience prescribed by the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services for posts in the above-mentioned Grade.

General conditions of appointment may be obtained from the undersigned. Applications, accompanied by the names and addresses of three referees, and endorsed with the description of the post applied for, must be delivered to me not later than Monday, 16th June, 1958. S. TAPPER-JONES, Town Clerk.

City Hall, Cardiff. 9603
May, 1958.

CUMBERNAULD DEVELOPMENT CORPORATION

Applications are invited for the following post in the Department of the Chief Architect and Planning Officer:-

ASSISTANT QUANTITY SURVEYOR (Grade B, Reference Q.S.3. Salary scale A.P.T. VIII (£1,139-£1,366). To take charge of a project from pre-planning stage to final account, working in close co-operation with the Group Architect. A.R.I.C.S. required.

Salary scale is that of the Whitley Council for New Towns Staff, and the appointment may be made above the minimum of the scale. The Corporation will endeavour to give, in an approved case, assistance in the provision of living accommodation.

Write (quoting reference number of post) for application form to the General Manager, Cumbernauld House, Cumbernauld, by Glasgow, to whom completed application forms should be returned not later than Saturday, 14th June, 1958. 9605

SHEFFIELD REGIONAL HOSPITAL BOARD

**ARCHITECTURAL DIVISION
APPOINTMENT OF PRINCIPAL ASSISTANT ARCHITECT**

Applications are invited from Registered Architects who have passed the requisite examination, for an appointment as PRINCIPAL ASSISTANT ARCHITECT (Scale II), within the salary scale £1,150-£1,350 per annum.

The person appointed must have had wide experience in a senior capacity, preferably in hospital work and will be responsible to the Regional Architect for all hospital building schemes in the area allocated to him, which may include major projects.

Applications giving full details of training, experience, qualifications, etc., to be submitted to the Secretary to the Board, Fulwood House, Old Fulwood Road, Sheffield, 10, not later than the 28th June, 1958. 9604

**CITY OF WAKEFIELD
CITY ENGINEER'S DEPARTMENT
APPOINTMENT OF ASSISTANT ARCHITECT**

SPECIAL GRADE (£750-£40-£1,030 per annum) Applications are invited for the above superannuable appointments, the commencing salaries to be fixed in accordance with qualifications and experience.

Applicants must be A.R.I.B.A., and preference will be given to those having Municipal experience and/or experience in the design and construction of schools.

The Authority has a full and interesting Building programme, and these appointments offer good opportunities to qualified Architects seeking experience in design and construction.

THE PROVISION OF HOUSING ACCOMMODATION WILL BE CONSIDERED.

Applications, stating age, qualifications and experience, together with the names of two referees, to be sent to the City Engineer, Town Hall, Wakefield, by 16th June, 1958. 9575

CITY AND ROYAL BURGH OF DUNFERMLINE

Applications are invited for the post of ASSISTANT ARCHITECT on salary scale A.P.T. Va-VI (£805-£935), with placing according to age, qualifications and experience. The post is superannuable and subject to medical examination. Applicants should be Associate Members of the Royal Institute of British Architects, and must have had at least two years' experience since qualification.

Particulars of appointment, and forms of application, may be obtained from the Burgh Architect, 6, Abbot Street, Dunfermline, to whom applications should be returned by 16th June, 1958.

The post has been designated by the Town Council for priority housing.

Applicants must disclose in writing whether to their knowledge they are related to any member or senior officer of the Town Council, and canvassing, either directly or indirectly, will be a disqualification.

J. DOUGLAS, Town Clerk.

City Chambers, Dunfermline. 9580
26th May, 1958.

MINISTRY OF HOUSING AND LOCAL GOVERNMENT—HOUSING AND PLANNING INSPECTORS.

Pensionable posts in London for men and women: (a) SENIOR INSPECTORS: (b) INSPECTORS. Age at least 45 for (a) or 35 for (b) on 1st June, 1958. Candidates must be, or have been, Registered Architects or Corporate members of appropriate professional institution with practical experience in housing design and development or town and country planning. Duties include conducting public local inquiries under Housing and Town and Country Planning Acts; considerable travelling. Men's salary: (a) £1,780-£2,050; (b) £1,280 at 35-37 to £1,430 at 40 or over, maximum £1,720. Higher starting pay provisions for posts (a) and (b). Promotion prospects. Write Civil Service Commission, 39, Old Burlington Street, London, W.1, for application form, quoting S4844/58. Closing date: 27th June, 1958. 9591

**METROPOLITAN BOROUGH OF FULHAM
BOROUGH ARCHITECT'S AND HOUSING DEPARTMENT**

(a) PRINCIPAL ASSISTANT ARCHITECTS. N.J.C. Special Scale (£750-£1,030, plus £30 p.a. London weighting). R.I.B.A. Final or equivalent, and five years' experience.

(b) ASSISTANT ARCHITECTS. A.P.T. II (£725-£845, plus London weighting £20-£30 p.a., according to age). R.I.B.A. Intermediate, and at least four years' experience.

The work is primarily concerned with schemes of multi-storey dwellings. Application forms from Town Clerk, Town Hall, S.W.6. Closing date: 17th June. 9581

LANCASHIRE COUNTY COUNCIL

SECTIONAL PLANNING OFFICER, Special Scale/A.P.T., Grade IV (£750-£1,175 per annum), required at the Divisional Planning Office, Liverpool. Candidates should possess a recognised qualification in architecture, civil engineering, surveying and/or planning. A thorough knowledge of Town and Country Planning legislation is essential, and experience in Town Map preparation would be an advantage. Applications, giving age, qualifications, present appointment, experience, etc., and two referees, to the County Planning Officer, East Cliff County Offices, Preston, by 23rd June, 1958. 9592

BUCKS COUNTY COUNCIL

Applications are invited for the appointment of a qualified STRUCTURAL ENGINEER in the County Architect's Department on A.P.T. V (£1,175-£450 (3)-£1,325 p.a.), commencing salary according to qualifications and experience.

A weekly allowance of 25s. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications, on forms provided, must be returned by 14th July, 1958.

F. B. POOLEY, County Architect. 9572

County Offices, Aylesbury. (Amended Advertisement)

COUNTY BOROUGH OF BLACKPOOL

Applications (by 10 a.m., 17th June, 1958) are invited for the appointment to the post of CHIEF ASSISTANT (ARCHITECTURAL SERVICES) in the Borough Surveyor's Department. Salary: Residual Scale C (£1,295 p.a./£1,515 p.a.).

Particulars and Forms of Application obtainable from the Borough Surveyor (Arthur Hamilton, B.Sc., A.R.I.B.A.), P.O. Box 17, Municipal Buildings, Blackpool.

ERNEST C. LEE, Town Clerk. 9588

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

Vacancies for (1) ARCHITECTS, Grade III, starting salary up to £1,090 a year. (2) ARCHITECTURAL ASSISTANTS, starting salary up to £860.

Full and interesting programme of Houses, Flats, Schools and General Building. Application form and full particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting Ref. AR/EK/21/58. (799) 9375

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited for the post of QUANTITY SURVEYOR. Salary range £934-£1,146. Preference will be given to Corporate Members of the R.I.C.S. Duties embrace Housing, Town Centre, and Industrial buildings. Superannuation schemes, medical examination. Housing available in due course. Apply by 18th June, 1958, giving age, education and qualifications, experience and appointments held (with dates), and names of two referees, to General Manager (Q.S.), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 9574

CUMBERLAND COUNTY COUNCIL PLANNING DEPARTMENT

Applications are invited for the appointment of ONE PLANNING ASSISTANT on A.P.T., Grade IV (£1,025-£1,175), with Final R.I.B.A. and preferably Final T.P.I. (or exemption).

Application forms and further information from County Planning Officer, 1, Alfred Street North, Carlisle. Closing date: 21st June, 1958.

G. N. C. SWIFT,

Clerk of the County Council. 9582
The Courts, Carlisle.

CITY ARCHITECT'S OFFICE, MANCHESTER

Applications invited for appointment in the permanent staff of ASSISTANT ARCHITECT. Salary Special Scale (£750 to £1,030 per annum). The commencing salary will be fixed according to qualifications and experience. Forms of application from the County Architect, P.O. Box 488, Town Hall, returnable by 14th June. 9573

ESSEX COUNTY COUNCIL

ILFORD COMMITTEE FOR EDUCATION Applications are invited for the appointment in the Education Architects' Section of the Borough Engineer's Office of (a) ONE ASSISTANT ARCHITECT, A.P.T. Special Grade (£750 x £40-£1,030 per annum, plus appropriate London weighting), and (b) ONE ASSISTANT ARCHITECT, A.P.T. I (£575 x £50-£725 per annum, plus appropriate London weighting).

The posts are superannuable and subject to medical examination. Commencing salaries will be fixed within the Grades according to experience.

Applicants for post (a) must be Associates of the R.I.B.A., and have had experience in the design and development of school buildings.

Applicants for post (b) must have passed the Intermediate R.I.B.A. Examination or its equivalent at a recognised School of Architecture. Applications should be made on a form to be obtained from and returned to the Borough Engineer and Surveyor, Town Hall, Ilford, together with copies of not more than three recent testimonials, within 14 days of the appearance of this advertisement. 9616

DENBIGHSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT, WREXHAM

Applications are invited for the appointment of TWO QUANTITY SURVEYING ASSISTANTS, A.P.T. Grade II (salary £725-£845 per annum), in the above Department.

Preference will be given to applicants who have passed the Intermediate Examination of the Royal Institution of Chartered Surveyors, Sub-Division III (Quantities Section). Applicants must have experience in "taking off" for all types of buildings works undertaken by a County Authority, measurement of works on site, preparation of interim certificates, and final accounts.

Application forms may be obtained from me. Completed forms to be returned by 21st June, 1958.

W. E. BUFTON,

Clerk of the County Council. 9617
County Offices, Ruthin.

STEVENAGE DEVELOPMENT CORPORATION

Applications are invited for the post of ASSISTANT LANDSCAPE ARCHITECT in the Chief Architect's Department on New Towns' salary grades A.P.T. III/IV, £679-£939 p.a., or A.P.T. IV/V, £753-£1,029 p.a., according to experience and qualifications.

The work entailed is of an interesting nature, and includes three new major projects—The Town Park, a Stadium, and the treatment of Radburn type housing development.

Candidates should preferably have passed the Final Examination I.L.A., and be experienced in the layout of open space in housing areas.

Housing accommodation will be available in due course in an appropriate case.

Applications, giving full details and names of two referees, to be sent to the Chief Administrative Officer, Aston House, near Stevenage, Herts., not later than Monday, 16th June, 1958. 9615

Tenders Invited

6 lines or under, 15s.; each additional line, 2s. 6d.

BOURGH OF ILFORD ERECTION OF 25 GARAGES IN WANSTEAD PARK ROAD, ILFORD

The Corporation invites tenders for the erection of 25 Garages in Wanstead Park Road, Ilford.

Applications in writing for the form of tender, specification and drawings should be made to the Borough Engineer, Town Hall, Ilford, accompanied by a deposit of £2 2s., which will be returned on receipt of a bona fide tender (not

subsequently withdrawn) and all documents issued.

Tenders in a plain sealed envelope endorsed "Tender for Wanstead Park Road Garages," bearing no name or mark indicating the sender, must be received by the Town Clerk, Town Hall, Ilford, not later than 4 p.m. on Tuesday, 24th June, 1958.

Conditions of Contract may be inspected at the Borough Engineer's Office during normal working hours. 9576

Architectural Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. 6d.

ASSISTANT ARCHITECT required by private firm in Nigeria. Single man preferred. Eighteen-month tour in first instance. Passages, living accommodation, and car provided. Salary according to age and experience.—Box 9472.

ASSISTANT, passed Intermediate, required for interesting and varied work with fair measure responsibility. London practice. Box 9510.

ARCHITECTURAL ASSISTANTS required for Hospital and other work, some office experience necessary. Intermediate or Final standard, five-day week. Apply to Adams, Holden & Pearson, 38, Gordon Square, W.C.1. 9525

SENIOR ARCHITECTURAL ASSISTANT, capable of making site surveys, preparing sketch plans and working drawings and supervising work in progress. Knowledge of shop fitting an advantage.—Applications, stating age, experience, qualifications and salary required, to R. E. Akerman, F.R.I.B.A., Chief Architect, United Dairies, Ltd., 31, St. Petersburg Place, W.2. 9421

COMPETENT and experienced ASSISTANT required for small busy practice in the West End. Shaw & Lloyd, 74, Great Russell Street, W.C.1. Museum 9695. 9514

QUALIFIED ASSISTANT required. London private practice, varied work, prospects. Box 9509.

LONDON firm of Architects seek qualified ASSISTANT, with some experience in design and construction drafting for laboratories. Salary according to qualifications and experience.—Box 9547.

ARCHITECT'S ASSISTANT, with office experience, a sound knowledge of straightforward construction, and ability to produce clear working drawings, required in busy Birmingham office. Pension Scheme. Salary £750.—Box 9551.

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for ASSISTANTS. Salary according to experience and qualifications.—Apply: 83, Kingsway, W.C.2 (HOL. 4071). 9550

GEORGE WIMPEY & CO., LIMITED THE ARCHITECTS' DEPARTMENT seek SENIOR and INTERMEDIATE ASSISTANTS, with experience in, and ability to apply their knowledge to, new construction techniques covering Multi-Storey Flats, Houses, Offices and Industrial Buildings for contracts in the U.K. and overseas.

Permanent appointments at Head Office, Hammersmith. 5-day week.

Salaries will be commensurate with qualifications and experience and, subject to satisfactory service, there is a Pension Scheme available.

IMMEDIATE SHORT-TERM APPOINTMENTS, FOR PERIODS UP TO 12 MONTHS ARE ALSO AVAILABLE FOR ASSISTANTS ON WORKING DRAWINGS AND DETAIL WORK.

WRITTEN APPLICATIONS, giving full particulars, to:—

E. V. COLLINS, A.R.I.B.A.,

Chief Architect, 27, Hammersmith Grove, London, W.6. Ref. 593.A. 9553

ARCHITECTURAL Department of development company group requires capable ASSISTANT (Inter standard) for varied work in North London office.—Write, stating age, experience, and salary required, to Box E544, Whites, Ltd., 72/78, Fleet Street, London, E.C.4. 9564

ASSISTANT required. Passed Inter. standard, with office experience of at least 5 years. Good draughtsman, capable of detailing and general routine, required for small busy office in W.C.2 district dealing mainly with Houses and Flats. Prospect of advancement for a keen, capable Assistant.—Full particulars, stating education, training, and past experience, present salary and salary required, Box 9546.

ARCHITECTURAL ASSISTANT (A.R.I.B.A.), seeking long term employment and capable of handling large and small projects, is required on the Architectural Staff of Guest, Keen & Nettlefolds (Midlands), Ltd.—Applications, stating age, previous experience, and approx. salary required, to Men's Employment Officer, Box 24, Heath Street, Birmingham, 18. 9545

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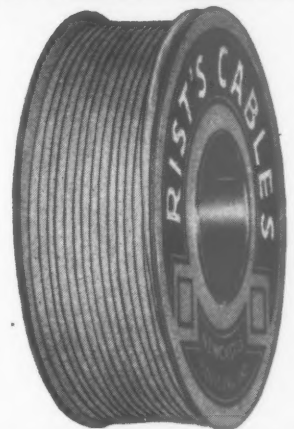
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